



MEMORANDUM

Via email

From: Perry McGuire, VP and General Counsel

To: U.S. Department of Energy, expartecommunications@hq.doe.gov

Re: *Ex parte* Memorandum

Date: August 14, 2024

Representatives of Rinnai America Corporation (“Rinnai”) met with Department of Energy officials on August 7, 2024, to discuss the Notification of Data Availability (“NODA”) for the Energy Conservation Standards for Consumer Water Heaters, EERE-2017-BT-STD-0019/RIN 1904-AD91. The following persons attended the meeting:

Rinnai:

Perry McGuire, Rinnai America Corp.

Eddie Ergican, Rinnai America Corp.

Renee Eddy, Rinnai America Corp.

Amos Anderson, Rinnai America Corp.

Frank Windsor, Rinnai America Corp.

Sarah Jorgensen, Reichman Jorgensen Lehman & Feldberg LLP

Ted Williams, Natural Gas Direct, LLC

Linda Willard, Dentons

Chris Fetzer, Dentons

DOE:

Julia Hegarty

Lucas Adin

Uchechukwu Eze

Peter Cochran

The NODA provides information relating to gas instantaneous water heaters (GIWH), including among other things an LCC analysis and an energy savings analysis for EL 0 to EL 4. The following issues were discussed:

1. The Department should not raise the efficiency level for all GIWH so as to allow only condensing GIWH and to exclude non-condensing GIWH. Non-condensing GIWH provide an affordable, efficient option that is valuable to consumers because, for example, they can be installed without condensate management and are more suitable for certain buildings and locations.

2. EPCA prohibits the Department from making performance features or characteristics unavailable. But it also provides a statutory solution: the Department can issue separate standards within the GIWH category for non-condensing models and condensing models. This would allow the Department to increase energy efficiency standards and would result in energy savings and reduced emissions, while keeping an efficient, affordable option available to consumers.
3. The Department's analysis in the NODA fails to take into account product substitution. Because 70% of water heater sales are replacements, and 80% of gas water heater sales are still gas storage water heaters (GSWH), many people are making decisions on replacing gas tanks. The Department's assumption that **no** would-be purchasers of non-condensing GIWH would instead purchase gas tanks, under an efficiency standard that leaves only higher-priced and more difficult to install condensing GIWH as an option, is contrary to historic market evidence and trends and ignores consumer purchasing behavior.
4. The proposed standard will likely result in a loss of energy savings. If only 30% of sales that would have been non-condensing GIWH instead switch to GSWH, the proposed rule results in a loss of energy savings. Non-condensing GIWH alone have already resulted in significant energy savings from 2005 to 2022, and the Department should be protecting this market trend toward greater efficiency.
5. The proposed rule is not economically justified, the LCC savings are likely to be negative when accurate cost data are considered, and the proposed rule will have an adverse impact on Rinnai's employees and U.S. manufacturing operations as well as on competition in the water heater market.

Rinnai's President, Frank Windsor, gave a statement that is attached to this Memo.

Rinnai is also attaching a presentation on information discussed at the meeting.



Introduction

I am Frank Windsor, the President of Rinnai America Corporation. I appreciate the opportunity to speak with you today regarding the Department's recent Notice of Data Availability regarding tankless water heaters.

American Investments, American Jobs

Over the past two decades, Rinnai has taken strategic action to increase the market share of non-condensing gas tankless water heaters. Rinnai built a robust sales force, developed extensive distribution and service networks, and opened a new manufacturing facility in the U.S. These efforts leveraged the energy saving benefits and relatively lower costs associated with non-condensing tankless gas water heater technology. Our initiatives have proven successful, as demonstrated by the growth in market share of non-condensing tankless gas water heaters, which have increasingly replaced less-efficient gas storage water heaters.

Rinnai currently employs 183 full-time employees and 49 temporary employees at its Griffin, Georgia plant, and has upwards of 400 additional employees across the United States. In the last six years, Rinnai has invested over \$100 million as part of its commitment to developing a strong domestic assembly facility to serve the North American market.

These investments include:

- In 2018, we opened our first U.S. assembly facility in Griffin, Georgia.
- In 2018, we completed renovations that tripled the size of our North American Headquarters in Peachtree City, Georgia.
- In 2020, we opened a 25,110 Square-foot Innovation Center of Excellence on the campus of our headquarters in Peachtree City, Georgia.
- In 2022, we invested \$70 million and opened a brand-new, state-of-the-art assembly facility on a 60-acre site in Griffin, Georgia. This facility was designed from the ground up to build our flagship non-condensing gas instantaneous tankless water heater and to serve the growing North American market.

These investments have allowed Rinnai to increase domestic assembly capacity, maintain a strong supply chain, provide timely delivery to our customers, and offer high-paying jobs to American workers.

The Benefits of Tankless Gas Water Heaters, Consumer Behavior, and Product Substitution

Gas instantaneous water heaters—whether non-condensing or condensing models—offer significant benefits, including energy savings, lower energy bills, a reliable supply of hot water, a longer lifespan than traditional gas tank water heaters, and valuable space savings. Tankless models are more energy-efficient than tanks as they heat water only when needed, reducing standby heat loss. Non-condensing gas tankless water heaters are particularly popular in the southern and southwestern U.S., where warmer climates and limited space make them an affordable and efficient choice.

An important factor to consider is that the growth of the gas tankless water heater market over the past two decades has come largely through replacing gas tank water heaters. Rinnai presented data showing

that gas tanks have declined as gas tankless have grown. Generally, 70% of water heater purchases are replacements. Because gas storage water heaters still constitute 80% of the *gas* water heater market, many consumers replacing a gas water heater will be replacing a *tank* gas water heater. The replacement of gas *tank* water heaters with *non-condensing gas tankless* water heaters from 2005 to 2022 has already had dramatic effects, saving 339 million MMBtus (0.34 quads) of energy and reducing carbon emissions by 37.7 billion pounds (17 million metric tons).

The impact of new efficiency rules on this market shift from gas tank water heaters to gas tankless water heaters must be considered, in terms of consumer product choice, energy savings, and emissions. The Department must consider rational economic behavior and all available options in water heater purchase decisions, whether in newly installed water heaters in new buildings or in replacement of existing water heaters. The proposed rule would obsolete non-condensing gas tankless water heaters, leaving a choice between non-condensing gas *tank* water heaters and condensing gas *tankless* water heaters. Condensing gas tankless are more expensive than non-condensing gas tankless and can be more difficult to install because they require different venting and condensate management. There is data showing that especially in the replacement market—again, 70% of all sales—when faced with increased costs or installation challenges, consumers often opt for the least expensive and simplest solution. Many buildings and existing customers are already set up for non-condensing technology, and installing condensing tankless heaters often requires costly modifications, such as new venting and condensate piping, drains, etc. These barriers may deter consumers with existing gas tanks from choosing condensing tankless models. The Department’s intended efficiency standards could therefore drive significant numbers of consumers to opt for less efficient gas tank water heaters instead of shifting to tankless gas water heaters. This reversal, or even just a slowing down, of the historic market trend toward tankless gas water heaters would negate expected energy savings and emissions reductions from the proposed rule, undermining national energy conservation goals.

Moreover, the Department underestimates the incremental installed costs to switch from non-condensing gas tankless to condensing gas tankless water heaters. But regardless, this is a significant, overlooked up-front cost burden that will be imposed on consumers. Rinnai believes that the higher costs and installation requirements of condensing gas tankless water heaters are likely to drive a substantial portion of consumers towards more affordable but less-efficient gas tank water heaters. This contradicts the Department’s assumption that there will be no shift in consumer purchasing decisions, an assumption not supported by evidence.

The Department’s analysis in the NOPR and now in the NODA acts as if gas tankless water heaters are in a box, and consumers have no other choice—something that is plainly inaccurate in light of historical data and that ignores that many consumers in that box are coming from outside the box and have a choice. The Department’s analysis also ignores the contribution of non-condensing gas tankless to the market shift from tanks to tankless and the resulting energy savings and emissions reductions, and what will happen to future sales of non-condensing gas tankless when that is no longer an option. The Department thus fails to adequately consider and account for consumer behavior and market trends that will lead to product substitution in response to increased efficiency standards. The Department’s assumption that there will be no product substitution overlooks historical market data and significant factors influencing consumer decisions.

The Proposed Rule

The Department's intended rule may set efficiency requirements above 90% for gas tankless water heaters, which is not feasible with non-condensing gas tankless technology. This intention to raise efficiency levels to allow only condensing gas tankless water heater technology while eliminating non-condensing technology poses substantial risks to consumers, U.S. employment, and investments. This proposed rule threatens the livelihood of nearly 600 families and jeopardizes \$70 million in U.S. manufacturing investments. Moreover, Rinnai's commitment to U.S. manufacturing could be compromised, potentially requiring repayment of U.S. incentives if plant operations decrease. Such regulatory changes will deter both domestic and foreign companies from investing in U.S. manufacturing and distribution due to fears of regulatory volatility and instability, prompting them to seek more stable environments. In short, the rule would unreasonably restrict consumer access to gas tankless water heaters, negatively affect Rinnai's investment and workforce, and disproportionately harm lower-to-middle-income households and small businesses by increasing costs for gas tankless water heaters.

Furthermore, this effort by the Department could be challenged in court as it may violate the Energy Policy and Conservation Act, which prohibits the government from removing appliance performance characteristics and features that are generally available to consumers now and from adopting rules that are not cost-effective, are not technically feasible, and do not result in significant energy savings.

Conclusion

Rinnai requests that the Department address these issues before adopting any final rule for gas tankless water heaters and suggests that it would be appropriate for the Department to consider all such changes to the NODA analysis and its original analysis in the NOPR through a supplemental notice of proposed rulemaking (SNOPR). Issuing a SNOPR would allow for public review and comment on the changes the Department has made to its analysis and its underlying assumptions. The Department, in particular, should address issues of product substitution and consumer choice analysis, which have not been adequately addressed.

Rinnai also urges the Department, as a simple solution to its concerns with energy efficiency, to consider establishing separate standards for non-condensing and condensing gas tankless water heaters to recognize their unique benefits and technical and economic differences, preserve consumer choice and ensure efficient, affordable options for consumers.

Finally, Rinnai believes that the goal of this rulemaking should be to strive to make improvements toward our nation's need for greater energy efficiency while adopting technologically feasible, cost-effective, and consumer friendly standards that do not threaten the market trend toward energy-saving tankless products or put American manufacturing jobs at risk.

DOE – Rinnai Meeting

Re: NODA for DOE Consumer Water Heater Efficiency Rule

August 7, 2024

Rinnai Corporation

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DOE's Intended Rule

- DOE's intention to increase efficiency levels of gas instantaneous water heaters (GIWH) to condensing levels eliminates a cost effective, reduced emissions, and highly efficient non-condensing GIWH option.
- Moving efficiency levels to condensing levels is not economically justified, and it makes product characteristics and features unavailable.
- Intended rule will not save energy, because DOE leaves less efficient gas storage water heater (GSWH) alternatives available; DOE fails to consider product substitution to these lower-efficiency products.
- Intended rule will have widespread impacts to consumers, U.S. manufacturing and jobs, competition, affordable housing.

Types of GIWHs

Condensing GIWH:

- slightly more efficient but more expensive than non-condensing GIWH
- have different installation suitability and requirements, including the need for condensate management, i.e., drainage and / or a condensate pump, neutralizer
- use different venting materials and designs from non-condensing technology

Non-condensing GIWH:

- cost less and are slightly less efficient
- smaller in size and have ease of installation because do not require condensate management
- use different venting from condensing technology
- non-condensing tankless water heaters are popular in southern and southwestern U.S. due to warmer climates and limited space

Both condensing and non-condensing GIWH are substantially more efficient than non-condensing gas tank or storage water heaters, as GIWH heat water only when needed, reducing standby heat loss

Impact of Intended Rule

Raising GIWH efficiency levels exclusively to condensing technology while eliminating non-condensing technology poses substantial economic and market risks:

- Threatens the livelihood of up to **600 families**
- Jeopardizes **\$70 million** in U.S. manufacturing investments
- Compromises Rinnai's commitment to U.S. manufacturing, potentially requiring repayment of U.S. incentives if plant operations decrease
- Deters both domestic and foreign companies from investing in the U.S. due to fears of regulatory volatility and jeopardizes future investments in U.S. manufacturing

Impact of Intended Rule

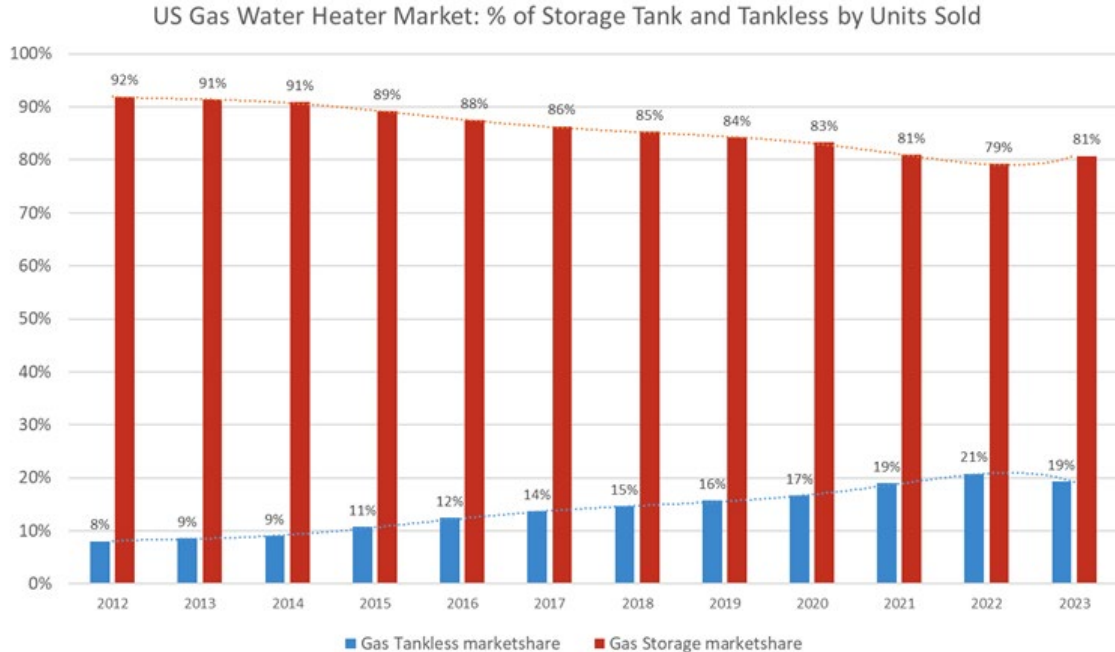
Under existing rule, expanding market for more efficient GIWH:

- GIWH have been expanding U.S. market share over the past two decades, in large part by replacing gas tank water heaters, which have seen corresponding declines in market share.
- This market-driven trend results in more efficient appliances, greater energy savings, and reduced emissions; the DOE should work to protect and promote this trend.

Under proposed rule, eliminating non-condensing GIWH and only allowing condensing GIWH will impede this market trend and result in lost energy savings:

- Non-condensing GIWH alone saved 0.34 quads of energy and 17 million metric tons of carbon emissions between 2005 and 2022.
- The proposed rule ignores potential product substitution with a less efficient and less expensive product still on the market: gas tank water heaters.
- If even 30% of sales that would have been non-condensing GIWH are instead sales of tanks, the rule results in lost or negative energy savings.

Market Trend: Gas Tankless and Gas Storage Water Heater Sales



Data source: BRG – North American Heating & Cooling Products, 2024 Edition

- Until 2022, gas tankless market share increased as gas tank market share declined.
- The decline in 2023 of sales of GIWH and the increase in sales of gas tanks may reflect price inflation, reduced home building, and decreased existing home sales.
- The decline in condensing GIWH was 7.4%, and in non-condensing GIWH was 3%.
- This market trend, driven by economic concerns, highlights that consumers make purchasing decisions based on price and will select less-efficient products.

Intended Rule Is Not Economically Justified

- DOE's data understates the cost differential from EL 0 (non-condensing) to EL 2 (condensing) for GIWH.
 - Rinnai data shows that the incremental installed cost would be on average **\$665 more** for condensing GIWH as compared to non-condensing GIWH.
 - DOE continues to use inaccurate data for venting costs.
 - DOE continues to ignore its own data on costs associated with condensate management.
- This change to the incremental cost will make the **LCC savings negative**.
- DOE's analysis also involves great variability that is not adequately addressed.

Intended Rule Is Not Economically Justified

- EPCA Section 6295(o) prohibits DOE from issuing a standard that is not economically justified.
- Average LCC savings for GIWH standard are **minimal**, from \$2 to \$109 for 20 years (NODA Table III.2).

EL	Avg LCC Savings (2022\$)
1	2
2	109
3	86
4	83

- LCC analysis relies on inaccurate information, making it probable the actual LCC is **negative**.
 - Rinnai submitted data showing that the DOE's costs do not reflect market dynamics and prices, and raised concerns with the DOE's modeling and assumptions.

DOE Does Not Adequately Address Product Substitution

- DOE analysis focused only on GIWH, ignoring market dynamics and practical consumer behavior.
 - Assumption that there will be no product substitution overlooks the availability of a less expensive but less efficient product and significant factors influencing consumer decisions, including cost and ease of installation, especially with replacements.
 - If non-condensing GIWH is eliminated, higher costs and installation requirements for condensing GIWH (on average \$665 more than non-condensing) will drive some consumers toward more affordable, but less-efficient water heaters.
 - Will discourage consumers from upgrading from less efficient GSWHs to GIWHs.
- **DOE needs to include and evaluate historic market trends, consumer purchasing behavior, and consumer choice in evaluating product substitution in response to increased efficiency standards that eliminate non-condensing GIWH.**

Intended Rule Will Not Result in Significant Energy Savings

- Many existing buildings and customers are set up for non-condensing technology, requiring costly modifications to install condensing GIWH (new venting & condensate management).
- The replacement market is **70%** of all water heater sales; barriers to switching to condensing technology, such as higher costs and complex installations, may slow down the trend of replacing gas tanks with gas tankless.
- Consumers generally prioritize lower initial costs and ease of installation.
- Mandating condensing GIWH will drive some consumers to choose less efficient GSWH.
- This shift in the current market trend would likely negate expected energy savings and emissions reductions, undermining national conservation goals.

Intended Rule Will Not Result in Significant Energy Savings

- EPCA prohibits DOE from issuing a standard that does not result in significant energy savings. Section 6295(o)(3).
- In the original NOPR, DOE showed **minimal** energy savings for GIWH: 0.40 quads of energy over 30 years.
 - DOE ignores the potential for product substitution when there is a less efficient product, GSWH, on the market: If only 30% of sales that would be non-condensing GIWH instead are gas tanks, there is a **loss** in energy savings and emissions reductions over the same 30-year time frame.
 - Rinnai's analysis shows leaving non-condensing GIWH on the market for next 30 years – i.e., the existing rule – could achieve an extra 0.61 quad of energy savings.
- There is no reason to believe this substitution effect and the corresponding loss in energy savings and emissions reductions changes under the NODA.

Intended Rule Makes Non-Condensing GIWH Features Unavailable

- Non-condensing GIWH characteristics or features that make them compatible with the existing utility infrastructure of a building, able to be used as a “like-for-like” replacement, and avoid having to manage condensate provide utility.
- Non-condensing GIWH have different characteristics for venting, installation space size and location, suitability for some replacement scenarios, and no need for condensate management.
- EPCA Section 6295(o)(4) states that DOE cannot amend a standard if likely to result in unavailability of performance characteristics or features.
- DOE reading of the statute as not treating non-condensing GIWH and condensing GIWH as having separate performance characteristics and features is unduly narrow.
 - In other rulemakings, DOE has considered size constraints, installation limits, and venting as distinct features.

Recommendations for Consideration

- DOE should address these concerns regarding the data, methodologies, and modeling before adopting a final rule for GIWH. DOE should hold a public hearing to answer questions.
- Given the changed data and methodologies, DOE should reconsider its analysis through a supplemental notice of proposed rulemaking (SNOPR).
- DOE should establish separate standards for non-condensing GIWH and condensing GIWH, pursuant to EPCA Section 6295(q), to recognize their technical, functional and economic differences, preserve consumer choice, and ensure efficient affordable options remain available.
 - Such separate standards could increase overall efficiency for GIWH while supporting the market driven trend toward replacing tanks with tankless and protecting American jobs and manufacturing.

Thank you

Rinnai

ENHANCING LIVES BY CHANGING THE WAY WATER IS HEATED