

APPENDIX

Appendix B: 2021-2022 NEEA Supply Chain Memo

Memorandum

December 21, 2021



TO: NEEA Coordinating and Advisory Committee Members

FROM: Jon Clark, Market Channel Manager

SUBJECT: 2021 Supply Chain Challenges: Market Evidence & Impact on Energy Efficiency Technologies

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Brief Context:

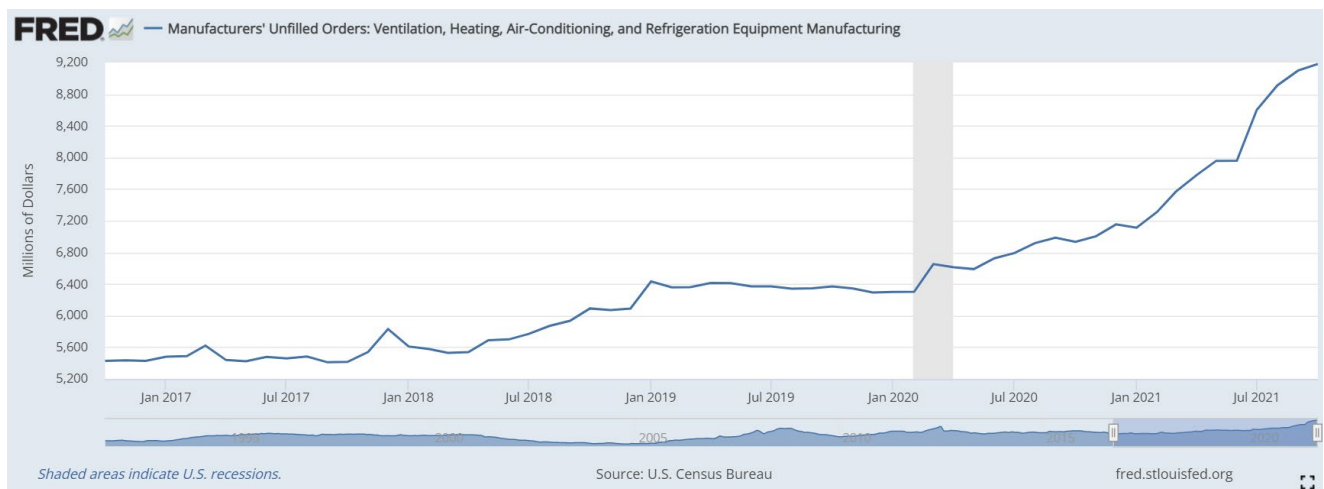
The Covid-19 pandemic has caused disruptions across every link in the global supply/demand chain resulting in product shortages and increasing prices in many industries. An example of this disruption occurred in early 2020 when panic-buying depleted the supply of toilet paper. Similar disruptions are being felt in product categories that are often part of utility energy-efficiency programs including HVAC, water heaters, and consumer electronics/appliances, resulting in increasing prices and limited availability.

Overview:

NEEA market partners involved in the manufacture and distribution of HVAC, water heaters, and consumer electronics/appliances have all indicated that they are experiencing supply chain disruptions. While the disruptions vary across industries – a shortage of microchips used in electronics/appliances; a shortage of compressors used in HVAC; a shortage of steel used in the manufacture of water heaters – the result of these disruptions are similar - higher prices, reduced selection, delayed shipments, and overall reduced product availability.

NEEA partners involved in the sale of these products have indicated that they have had to pass along the price increases to purchasers and that availability issues are causing a shift in what is being purchased. Oddly, increased prices and limited availability haven't reduced sales as many of these partners are reporting record sales volumes in 2021.

The results of reduced availability from suppliers and increased sales can be seen in this Federal Reserve graph of manufacturers of HVAC and refrigeration equipment that shows unfulfilled orders at a 5-year high.



Impact Example:

The water heater industry is being impacted by many of the global disruptions. AOSmith, the largest manufacturer of water heaters in the U.S., recently [reported](#) that they have passed along five price increases in 2021 primarily due to increases in the price of steel and logistics. AOSmith's heat pump water heater (HPWH) business is being further interrupted due to a shortage of microprocessor chips that are required for general control of the unit, and for CTA-2045 connectivity significantly reducing the number of units that can be manufactured. This is happening at the same time that states like Washington are implementing administrative codes that require electric storage water heaters to be CTA-2045 enabled.

Wholesalers of HPWHs that work with NEEA indicate that their builder customers aren't slowing construction, and due to the lack of product, they are asking for alternative products including tankless water heaters. Wholesalers are concerned because it has taken a great deal of effort, in some cases years, to get their customers used to and comfortable with HPWHs. While product shortages have the potential to impact near-term HPWH unit goals, the shortages may have longer-term impacts on the view of HPWHs in the market resulting in challenges in achieving energy-efficiency goals.

In an effort to keep HPWHs top of mind, NEEA worked with water heater manufacturers that represent over 90% of unit sales to provide comments to the State of Washington supporting a delay on CTA2045 implementation requirements (click [HERE](#) to read the comments letter). While the document outlines how supply chain disruptions are impacting our work in the HPWH arena, they can easily be applied to our collective HVAC and consumer electronics/appliance energy-efficiency efforts.

Please contact **Jon Clark** (JClark@neea.org) or **Jeff Mitchell** (JMitchell@neea.org) if you have questions about this memo.

Memorandum

April 13, 2023



TO: NEEA Coordinating and Advisory Committee Members

FROM: Jon Clark, Strategic Accounts Manager, Retail and Wholesale

SUBJECT: Supply Chain Challenges: Market Evidence & Impact on Energy Efficiency Technologies

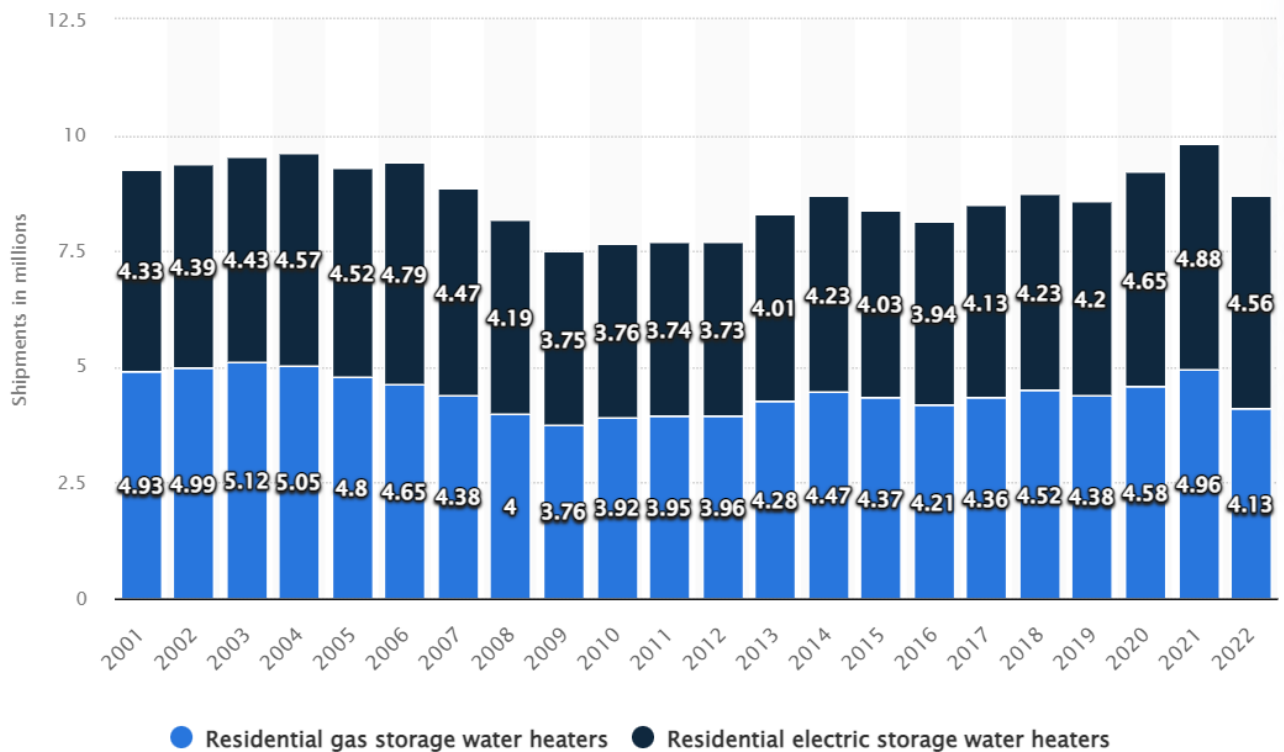
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Brief Context:

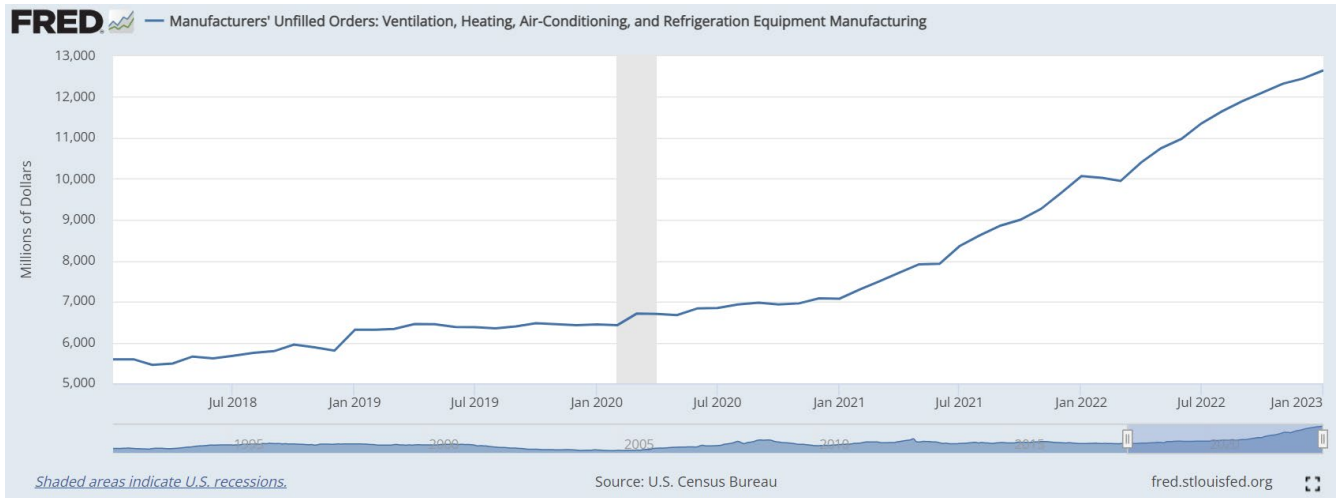
This is an update to a similar memo provided to NEEA funders in Dec 2021. The Covid-19 global pandemic caused numerous disruptions to the supply chain resulting in the lack of product availability described in the December 2021 memo, and in particular, increased prices and lower volume of water heating and HVAC units shipped/sold in North America in 2022. While product availability is improving, these pandemic-driven shortages are forecasted to continue causing challenges to availability.

Overview:

Supply chain constraints caused shortage in raw materials and components resulting in fewer units built with higher price tags. In their Q4 2022 financial filings, AO Smith, one of the world's leading manufacturers of water heating solutions and the largest seller of residential water heaters in the U.S. reported record sales for the year. They provide additional clarity on the performance: *“Higher North American sales due to pricing actions partially offset by lower residential water heating volumes.”* Higher prices, lower volumes. In a [report](#) AO Smith forecast the U.S. residential water heater business to range +2% to -5% for 2023. Price increases for water heaters have been well documented by NEEA’s market partners and the following graph from the Air Conditioning, Heating, & Refrigeration Institute (AHRI), the trade association representing manufacturers of heating, ventilation, air conditioning, commercial refrigeration (HVACR), and water heating supports the unit decline.



The HVAC industry is seeing similar results to the water heating industry. The results of reduced availability from suppliers continues and can be seen in this Federal Reserve graph of manufacturers of HVAC and refrigeration equipment that shows unfulfilled orders continuing to grow and at a 5 year high.



In an effort to keep HPWHs top of mind, NEEA worked with water heater manufacturers that represent over 90% of unit sales to provide comments to the State of Washington supporting a delay on CTA2045 implementation requirements (click [HERE](#) to read the comments letter). While the document outlines how supply chain disruptions are impacting our work in the HPWH arena, they can easily be applied to our collective HVAC and consumer electronics/appliance energy-efficiency efforts.

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