Supply Chain Assessment

October 31, 2022 | Volume 3, Issue 10

Energy Solutions

Economic uncertainties stemming from lasting inflationary pressures have driven down demand at a time it is typically highest entering peak shipping season. Although exceeding pre-pandemic levels, shipping rates have sharply declined due to the faltering demand, signaling relief for shippers whose operational budgets have been strained by record high freight costs in the last year. Port backlog has also appeared to ease, with only four vessels waiting to dock at the ports of Los Angeles and Long Beach earlier in October compared to 109 vessels in January. However, supply chain snags seem to have moved inland, with ongoing issues such as limited trucker availability contributing to component shortages, equipment delays, and price increases that continue to impact the energy efficiency market.

Findings

1. Product Availability

a. **HVAC**

In preparation for the 2023 Department of Energy (DOE) code changes effective January 1, some manufacturers are introducing new equipment or upgrading existing equipment to expand their compliant product offerings. Component shortages of variable frequency drive (VFD) chips and electronically commutated motors (ECMs) have impacted fan, pump, and compressor availability, delaying delivery of air-sourced air conditioners and heat pump systems, including variable refrigerant flow (VRF) systems, to 2023. Facing backlogs as much as five times longer than average, distributors quote lead times of 12 weeks for water-source heat pumps, 24 to 26 weeks for direct expansion units, and up to 38 weeks for air-cooled chillers. Lead times range from 13 to more than 25 weeks for packaged rooftop units (RTUs) depending on size, and 10 to 12 weeks for small- and medium-sized split systems.

Trade Ally Team Communications per Technology Domain

	This Issue	Volume 3 to Date
HVAC	31	288
Foodservice	22	217
Water Heating	17	177
Pumps	10	96
Lighting	13	139
Life Sciences	7	97
Total	**100**	**1,014**

TABLE 1.

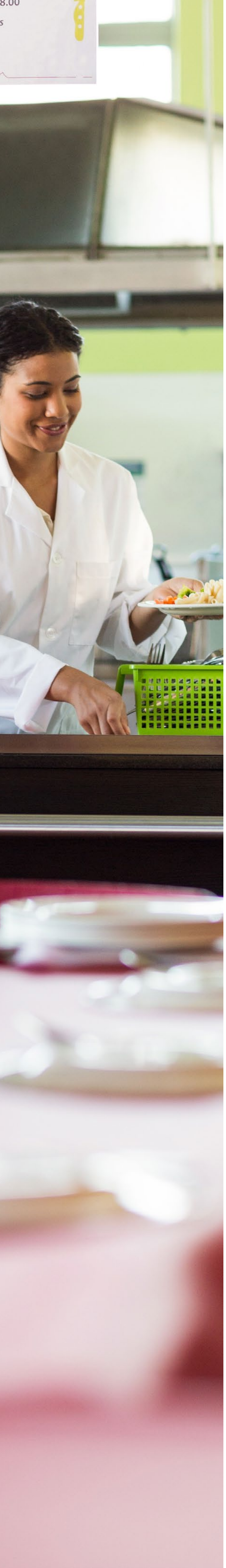
b. **Water Heating**

i. Distributors face lead times of more than 20 weeks on residential equipment.

ii. A major gas water heater manufacturer noted plans to launch their first electric heat pump water heater (HPWH) by 2024.

c. **Foodservice**

Although supply chain challenges persist, some dealers report strong inventory of equipment such as fryers and convection ovens and well-stocked showrooms and displays.



2. Equipment Sales

a. HVAC

Driven by supply chain lags and customers deferring purchases in favor of Inflation Reduction Act (IRA) rebates, manufacturers and distributors concerned with updating inventories in time for DOE code changes anticipate having unsellable stock with fewer sales in 2023. Some distributors are wary of offering an incentive in 2022 for jobs that may not be installed until 2023, and note that steady programs and incentives would support ongoing sales of high efficiency equipment.

Program Spotlight

TECH Clean California is a statewide initiative to accelerate the adoption of clean space and water heating technology across CA homes to achieve carbon neutrality by 2045. In its first eight months, TECH reserved more than $48 million in incentives; enrolled and trained nearly 1,000 contractors to sell and install heat pumps (HPs); launched six pilots to test and assess strategies to accelerate HP adoption; solicited and funded 11 Quick Start Grants primarily focused on deployments for low-income customers; and launched a public reporting website to support investment in the HP market. TECH has already started to transform CA's HP market, and in August, the state passed the CA Energy Trailer Bill that will direct an additional $50 million to TECH for FY 2022-2023.
For more information, visit techcleanca.com.

b. Water Heating

Despite reports of delayed commercial gas water heaters, some distributors forecast low commercial HPWH sales volume due to contractors favoring jobs with like-for-like replacements rather than gas to electric water heater conversion. Meanwhile, one distributor notes a Northeastern trend in gas boiler replacement with HPWHs and instantaneous boilers. Another distributor has observed growing demand in Tier 4 HPWH products for new construction jobs and plans to stock more of these units as supply becomes available.

c. Foodservice

i. Costs continue to climb for high efficiency equipment like fryers, slowing sales as customers delay new and noncritical purchases in the face of economic uncertainties. Ongoing staff shortages have additionally impacted sales.

ii. On October 11, the Biden-Harris Administration announced $50 million in grants for schools to invest in new foodservice equipment. This funding can complement rebates offered through Energy Solutions' Instant Rebate programs, which enable high efficiency purchases that achieve cost and energy savings, such as the $1.8 million and 252,000 kWh in projected savings from **Massachusetts' Springfield School District's participation**.

d. Lighting & Electrical

i. Although supply chain backlogs continue to lengthen project sales cycles and challenge stocking capabilities, most distributors have been able to maintain their inventory levels and find that customers are receptive to product alternatives. In fact, a recent survey revealed sales growth in Q3 with projections of additional growth in Q4 and beyond, albeit at a slowing rate. Distributors have observed decelerated sales in the large new construction market, while demand in small and medium new and renovation markets remains strong with forecasted growth in commercial retrofit, education, and healthcare projects. Most of the industry does not anticipate price increases to occur in Q4.

ii. To simplify the equipment selection process for lighting professionals and facility managers, some manufacturers are introducing online lighting configurators that generate a list of required materials based on project preferences and application.

e. **Life Sciences**

A distributor projects strong Q4 sales of freezers in anticipation of flu season and needed vaccine storage.

3. Service Providers / Contractors

a. **Water Heating**

Contractors are busy with the transition from cooling to heating season. Although compressors can create space constraints with HPWH installations, distributors note an opportunity to upsell to higher efficiency equipment with momentum in electric water heater purchases. This shift has been supported by engineer, designer, and contractor trainings that create greater awareness of HPWH equipment and installation.

b. **Lighting & Electrical**

As limited product availability slows the rate of sales, decelerating project activity is expected over the next six months with difficulty meeting project deadlines.

4. Administrative / Application Submittal

a. **Across Technologies**

Staff turnover and limited availability have left some distributors with claim backlogs dating back to June. Others with dedicated claim processor roles report success in sustaining high-volume sales submissions for equipment such as air-source heat pumps, HPWHs, and ECM pumps.

About Energy Solutions

For more than 25 years Energy Solutions has provided cost-effective, market-driven solutions that deliver reliable, large-scale impacts. We implement more midstream and upstream programs in North America than any other company, which gives us access to valuable insights across technologies.

Our program success is fueled by a deep connection to the market. These market relationships have allowed us to closely monitor supply chain impacts to keep you informed.

To learn more about Energy Solutions' programs and services, contact Jeff Johnston at:
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Disclaimer: This report reflects our best estimate of market impacts, with the information available at this time. Energy Solutions will continue to provide valuable reporting on supply chain conditions. These updates will be versioned and dated to indicate at what time they apply.