



Rail Energy Transportation Advisory Committee

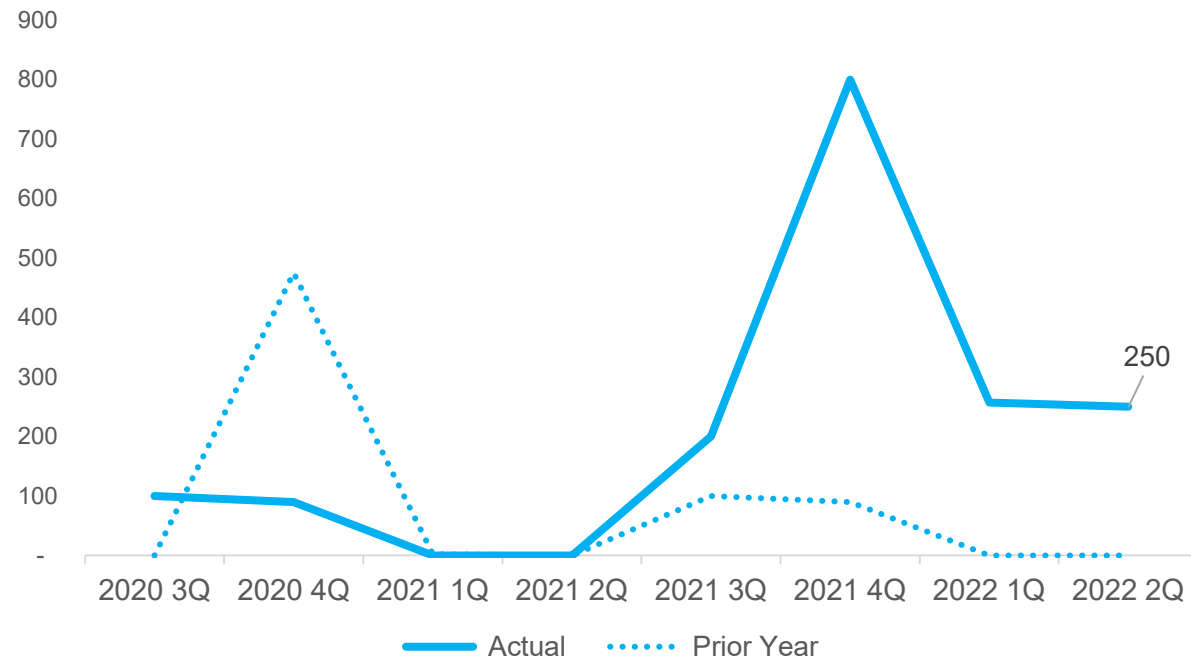
STB RETAC Railcar Update – Oct 2022



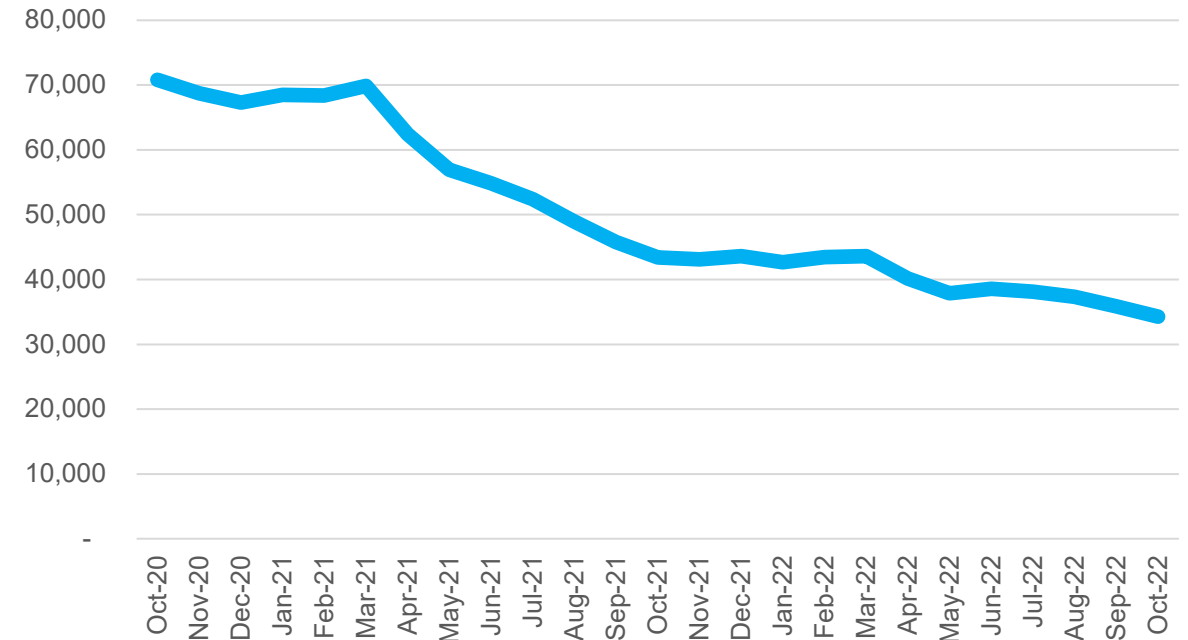
The information in this presentation and the accompanying views and analysis are based on publicly-available industry sources and do not necessarily represent the proprietary information, analysis, or outlook of The Greenbrier Companies.

Increase in Coal Demand Results in Short-Term Demand for Coal Cars

Open Hopper + GT Gondola Orders
(North America, units, ARCI)

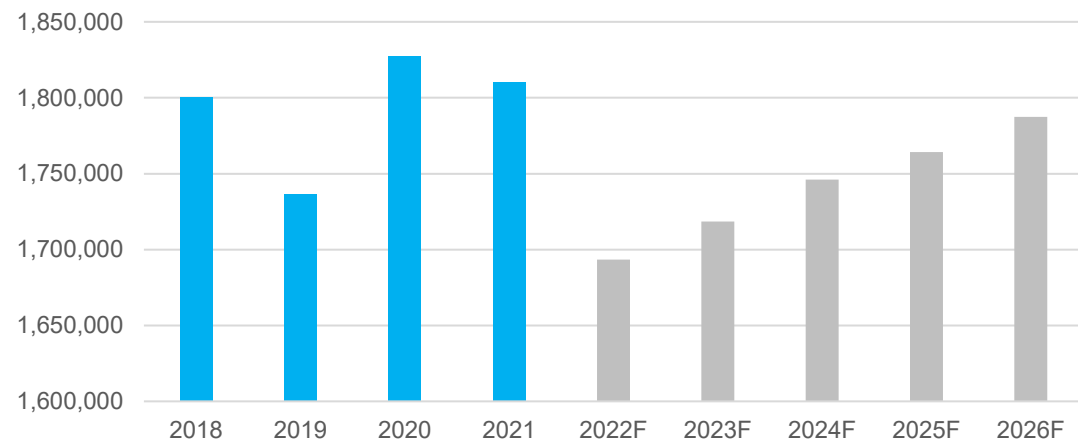


Coal
Cars in Storage

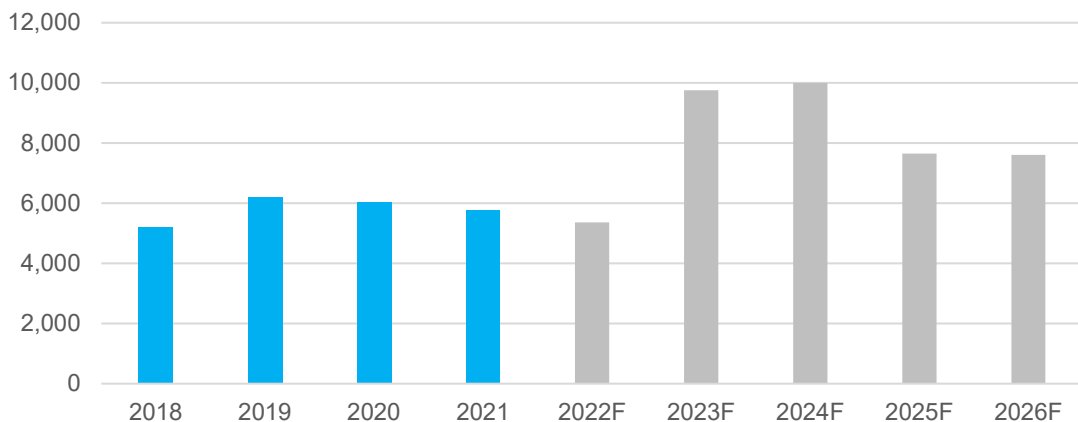


Renewal Energy Impact on Covered Hoppers

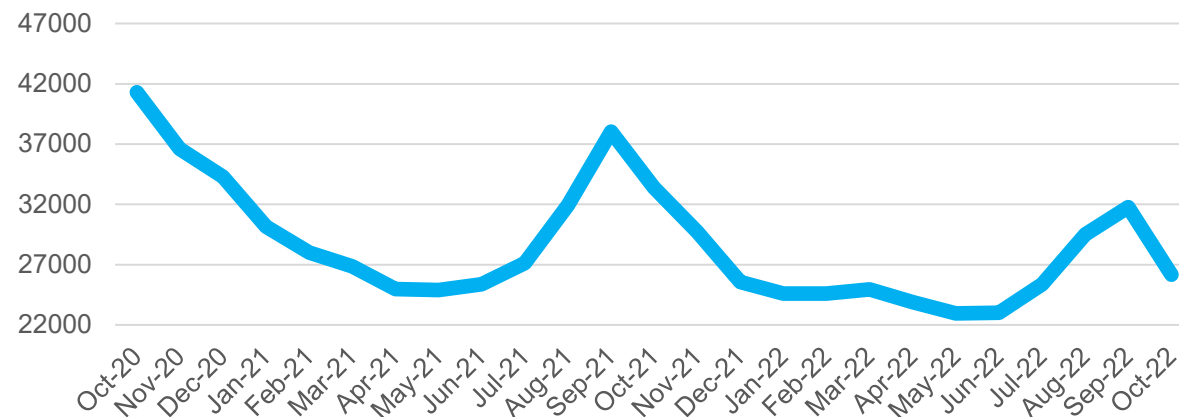
Farm Products Loadings



Grain Car Deliveries



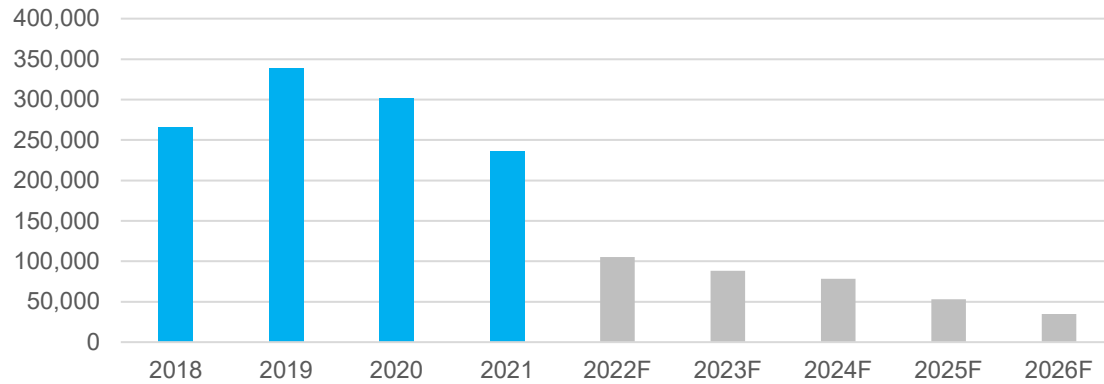
Grain / Fertilizer Railcars in Storage



Industry Impacts on Tank Cars

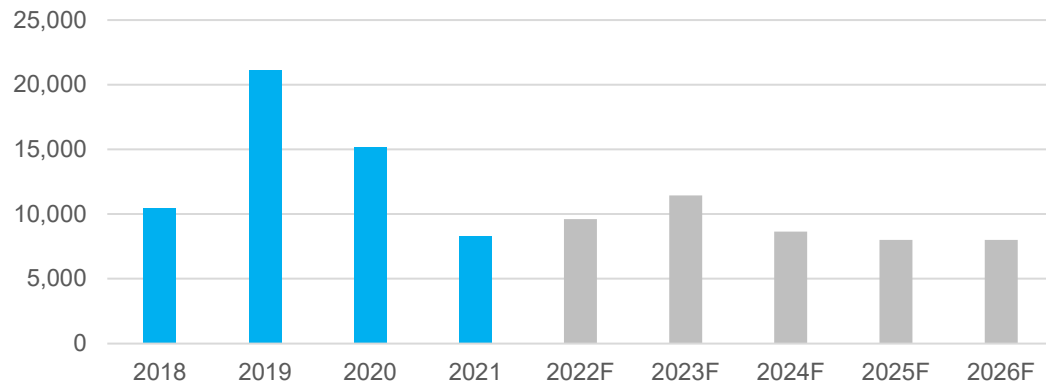
Tank Car Energy Loadings

(Crude Petroleum, Natural Gas and Natural Gasoline)

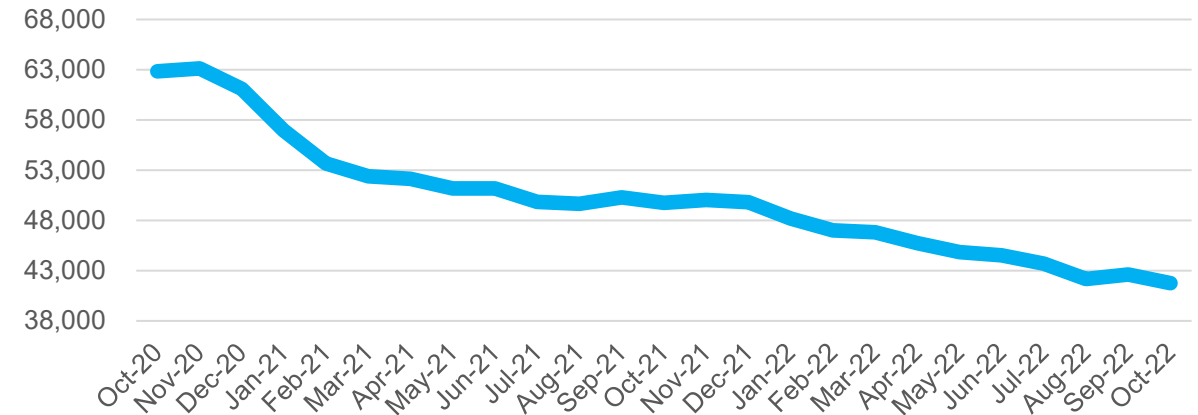


Tank Car Deliveries

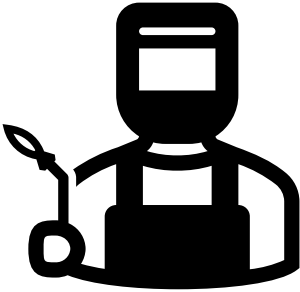
(All Tank Cars)



Crude Oil / Ethanol Cars in Storage

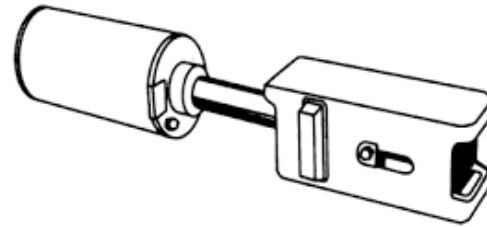


Shop Constraints = Plan Ahead



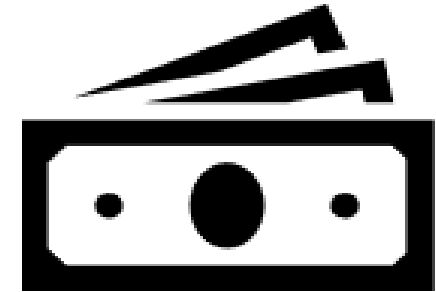
Labor Recruitment and Retention

- Shops are having difficulty rehiring post-covid and wages skyrocketing
- Federal and industry training hour requirements for tank car work has increased the complexity of shops to maintain required certifications of shop-floor personnel



Material Shortages

- Long lead times on many components.
- Suppliers are unable to provide estimated delivery times. e.g. EOCC units

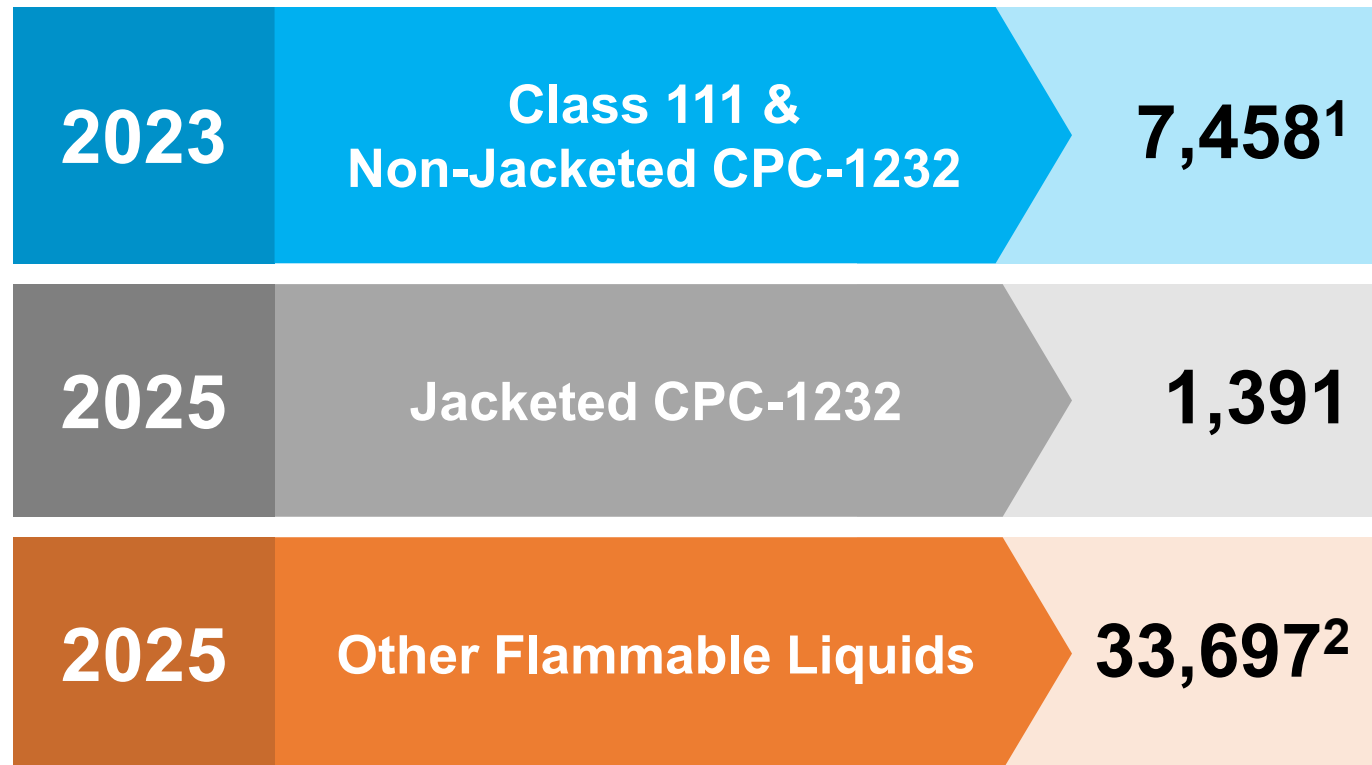


Higher Costs

- Unpredictable fuel costs make pricing difficult
- Higher Switching Costs

Tank Qualification Requirements over the next five years will further stretch shop capacity

US & Canada



¹ Ethanol transported in jacketed CPC-1232 tank cars are not authorized after 5/1/2025

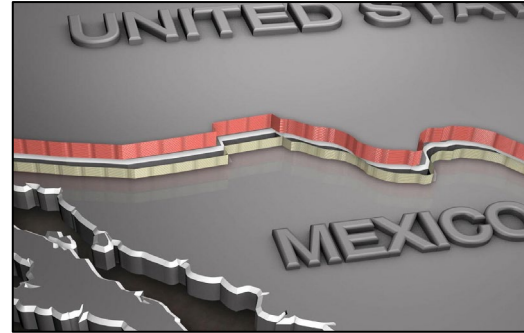
² In the United States, flammable liquids, Packing Groups II and III, transported in Class 111 tank cars are not authorized after 5/1/2029.

- Based on 2nd Quarter 2022 numbers, the number of tank cars that require replacement to DOT-117J, or retrofitted to DOT-117R, or removed from flammable liquid service by Service/Date
- 42,616 tank cars require replacement, retrofitting, or removal from flammable liquid service in the North American fleet based on commodity movements in Q2 2022

Railroad Inefficiencies Impact on Production & Repair Shops



- Delays getting cars into and out of repair shops is increasing dwell times



- Border crossing congestion
 - Re-routes
 - Misrouted cars
 - Additional costs