ARKANSAS CLEAN CITIES COALITION ARKANSAS CLEAN CITIES NEWSLETTER NOVEMBER 2022

ARKANSAS ENERGY & ENVIRONMENT

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ZERO EMISSIONS FUTURE

In 2019, more than half of energy-related carbon dioxide (CO2) emissions came from the transportation sector in 11 states.



2022 has brought many opportunities for the State of Arkansas to reduce CO2 emissions. At the forefront is the role hydrogen might play in transportation decarbonization. Advancing hydrogen technology provides two opportunities for cleaner transportation: hydrogen fuel cells and hydrogen combustion engines. On-road vehicle manufacturers are ramping up the pace and scale of development of hydrogen fuel cell electric vehicles (FCEV). Hydrogen engines have received attention, in particular, for application in medium and large trucks. Jim Nebergall, General Manager of Hydrogen Engines at Cummins Inc. stated that, "medium and heavy-duty applications are more likely to turn to hydrogen fuel cells or engines."

The Port of Los Angeles and partners recently completed a successful 12-month demonstration using Kenworth T680 tractor-trailers, fitted with Toyota's Mirai hydrogen fuel cell technology, for moving freight around short distance. Ten demonstration trucks completed 500-mile routes daily with 15-minute fueling breaks at new hydrogen fueling stations built by Shell. Toyota deemed this a successful

project and predicts increased customer interest in hydrogen-fueled vehicles. Accordingly, Toyota announced that it will produce its first commercial fuel cell modules at their Kentucky plant in 2023.

As these technologies are being substantiated, it is important to remember that there are substantial barriers to overcome, such as the high production costs and limited infrastructure that accompanies any novel technology. Arkansas is working to promote infrastructure in the region through the 3-state HALO initiative formed by Louisiana, Oklahoma, and Arkansas. This partnership is competing for Department of Energy funds to establish a regional hub for developing, producing, and using clean hydrogen fuel. Governor Asa Hutchinson explained, "In Arkansas, we have a growing and diverse energy portfolio and natural resources vital to any successful regional hub. We are the proud home of prominent partners and companies critical to U.S. commerce with a strong history of environmental leadership and track records of reducing emissions. We are excited to partner with our neighbors in Louisiana and Oklahoma to put forward a winning application." This could impact Arkansas transportation emissions significantly because \$226 billion in goods are shipped across Arkansas each year, mostly by truck, according to The Road Information Project, a national nonprofit research group (TRIP 2020). That represents over 219 million tons of goods transported per year according to the Arkansas Department of Transportation. The HALO Initiative would allow Arkansas to build critical infrastructure needed to support the decarbonization of the commercial freight industry, thereby lowering the state's overall CO2 emissions. It will take many technologies to decarbonize, and hydrogen will likely be a key component as Arkansas expands its transportation fuels portfolio.

This newsletter is a monthly feature of the Arkansas Clean Cities Coalition whose focus is alternative fuels and vehicles, advanced technology, efficient vehicles, greater use of mass transit systems, trip elimination measures, and other congestion mitigation approaches.