

CORRESPONDENCE

McMillan, Acquanette (Netta)

From: Kaly
Sent: Saturday, April 18, 2026 5:24 PM
To: PublicComment-AutoResponse; Gordo, Victor; Madison, Steve; Masuda, Gene; Hampton, Tyron; Rivas, Jessica; Cole, Rick; Jones, Justin; Lyon, Jason
Subject: Public Comment_Agenda Item 10_Please invest in E-Buses

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*Pasadena City Council
175 N. Garfield Ave.
Pasadena 91101*

Re: Support for Battery Electric Buses Over Hydrogen Fuel Cell Buses

Dear Council and Staff,

I am writing to express strong support for prioritizing battery-electric buses over hydrogen fuel cell buses. While both technologies aim to reduce emissions, electric buses are superior from both an economic and environmental standpoint.

Battery electric buses are significantly more cost-effective across their lifecycle. They have lower fuel costs because electricity is more efficient and less expensive than hydrogen on an energy-equivalent basis. Electric drivetrains are also simpler, resulting in reduced maintenance costs and fewer mechanical failures. In contrast, hydrogen buses require costly fuel production, storage, and distribution infrastructure, as well as higher vehicle costs due to more complex systems. These factors will create long-term financial burdens for the City of Pasadena and taxpayers.

Electric buses are far more energy efficient. Charging a battery and using that electricity directly results in substantially less energy loss compared to producing hydrogen (often via electrolysis), compressing or liquefying it, transporting it, and converting it back into electricity in a fuel cell. This inefficiency means hydrogen buses require significantly more energy to travel the same distance.

Electric bus charging infrastructure is simpler, more widely available, and easier to scale. Hydrogen fueling infrastructure remains sparse, expensive, and technically complex, limiting flexibility and increasing project risk.

Given limited City resources, please invest in the most efficient, cost-effective, and environmentally-beneficial option. Battery electric buses meet all of these criteria and represent the best path forward for a sustainable and fiscally-responsible transit system.

Thank you,

Kaly Trezos

McMillan, Acquanette (Netta)

From: cityclerk
Sent: Saturday, April 25, 2026 7:23 PM
To: Iraheta, Alba; Jomsky, Mark; Robles, Sandra; Sabha, Tamer; McMillan, Acquanette (Netta); Soo, Christine
Subject: FW: Comment on item 1 - MSC April 28 Agenda - Hydrogen Fueling

From: Sanford Krasner ·
Sent: Saturday, April 25, 2026 7:22:19 PM (UTC-08:00) Pacific Time (US & Canada)
To: cityclerk <cityclerk@cityofpasadena.net>; Cole, Rick <rcole@cityofpasadena.net>; Jones, Justin <justinjones@cityofpasadena.net>; Lyon, Jason <jlyon@cityofpasadena.net>; Hampton, Tyron <thampton@cityofpasadena.net>
Subject: Comment on item 1 - MSC April 28 Agenda - Hydrogen Fueling

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This is a comment on item 1 on the April 28 Municipal Services Committee agenda:
AUTHORIZE THE CITY MANAGER TO ENTER INTO A CONTRACT WITH
STANTEC CONSULTING SERVICES, INC. FOR BIDDING AND
CONSTRUCTION ADMINISTRATION SERVICES FOR THE HYDROGEN
FUELING STATION PROJECT IN AN AMOUNT NOT TO EXCEED \$316,800

In December of 2018, the California Air Resources Board (CARB) set a statewide goal for zero-emission bus fleets by 2040

On August 25, 2025, the Pasadena City Council authorized \$32 million for acquisition of 17 hydrogen-fueled buses, and supporting infrastructure. The City has recently issued a Request for Proposals (RFP) to design the fueling station to support them. These buses violate the City's intent to reduce greenhouse gas emissions. The City should reverse this decision and procure electric buses instead.

Let's start with the entire hydrogen lifecycle. Someone has to produce the hydrogen that these buses will run. Has the city done a full lifecycle analysis of the impact of a hydrogen bus fleet? What is the total impact on greenhouse gases compared to electric buses?

Will this hydrogen be "green" or "gray"?

"Gray" hydrogen is produced by steam reformation of methane (the primary component of natural gas and itself a powerful greenhouse gas). 95% of current production of industrial hydrogen is gray; only 1% is green. Gray hydrogen requires natural gas, uses a large amount of energy and releases carbon dioxide. Some plants are proposing to recapture the carbon dioxide; the primary use of captured carbon dioxide is to inject it

underground in order to pump more oil, generating even more greenhouse gases. In addition, up to 10% of hydrogen boils off during transport, producing 30-40 times more global warming (over 20 years) than an equivalent amount of CO₂. Gray hydrogen is a climate nightmare.

“Green” hydrogen can be produced without greenhouse gas emissions, by electrolyzing water – if the electrolyzer is powered by carbon-free energy. These electrolyzers are inefficient users of electricity. The round-trip efficiency is 30-45% compared to an electric bus efficiency of 85-90%.

Less than 1% of hydrogen is currently “green” Who has plans to produce it? The Trump administration has cancelled the ARCHES program that would have built hydrogen hubs in California.

Where will the carbon-free electricity come from to power the electrolyzers? Pasadena is working hard to reach 100% carbon-free electricity. There are many better uses for carbon-free electricity, including powering more efficient electric buses.

Will Pasadena build an electrolyzer at the fueling station? Or will hydrogen be trucked in, through a residential district? How reliable is remote hydrogen production and transportation? A hydrogen truck explosion in February in Colton killed one person and caused a shortage of hydrogen for over a month.

What is the total lifecycle cost of hydrogen buses compared to electric? A recent study showed that electric buses have about 40% lower lifecycle costs. Hydrogen bus operating cost/mile is more than twice that of electric buses

Is the bus and station procurement funded by unreliable federal and state grants? Arcadia, CA recently abandoned its hydrogen-powered fleet because the supporting grants were cancelled.

Cities in England, Scotland, Canada and Germany have abandoned their hydrogen bus fleets.

Why will Pasadena be more successful?

Transit companies such as L.A. Metro, L.A. DOT (DASH buses), Santa Monica Big Blue Bus, Long Beach Transit, Culver City Bus, and Anaheim Regional Transit have successfully implemented electric buses. Antelope Valley recently reached 21 million miles of electric bus transport, with availability better than diesel buses.

We have been told that hydrogen buses are more reliable in the event of a widespread power outage. However, it takes electricity to run an electrolyzer, or to pump hydrogen from a transport truck or a storage tank. How many days of hydrogen can be stored at the fueling depot?

Hydrogen buses make no economic or climate sense.

Pasadena should present an in-depth study of these questions and compare the impacts of gas and electric buses.

I believe that Pasadena should halt its procurement of hydrogen buses, and switch to electric.

Thank you for your consideration.

Sanford Krasner

Altadena Resident

Member of Pasadena 100

Phone:

email: [redacted]