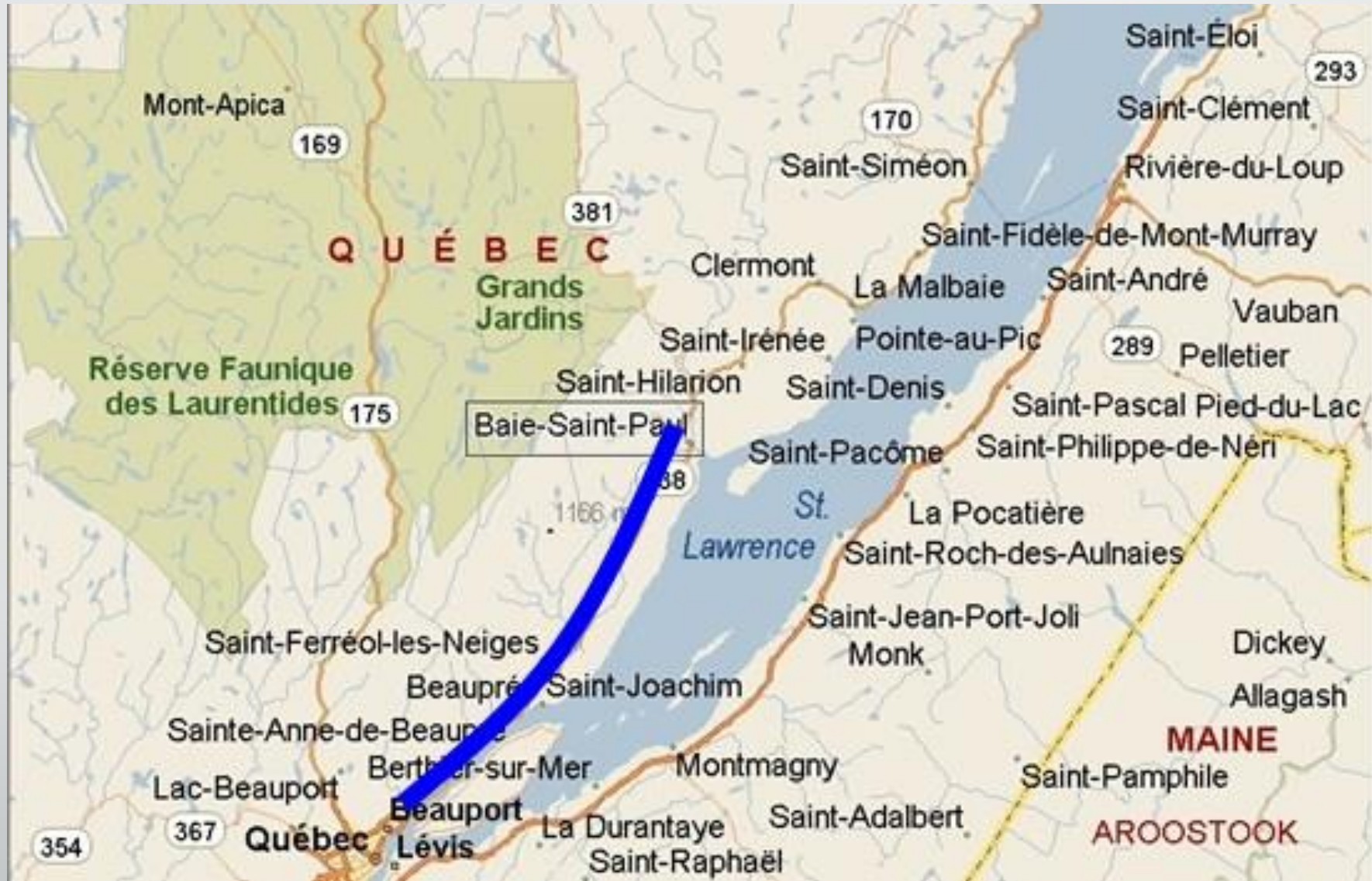




# **On Board the Hydrogen Train**





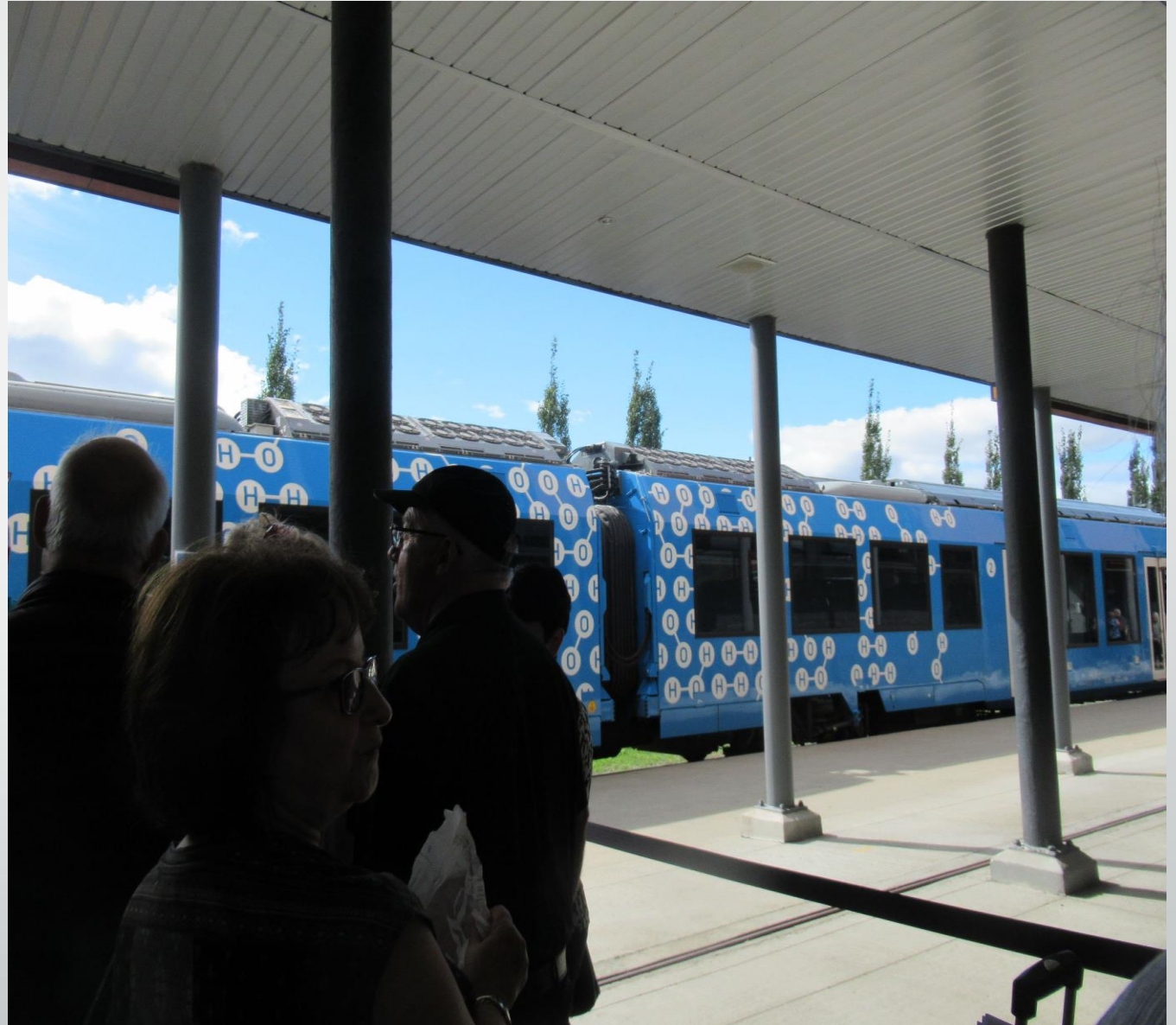
# THE TRAIN

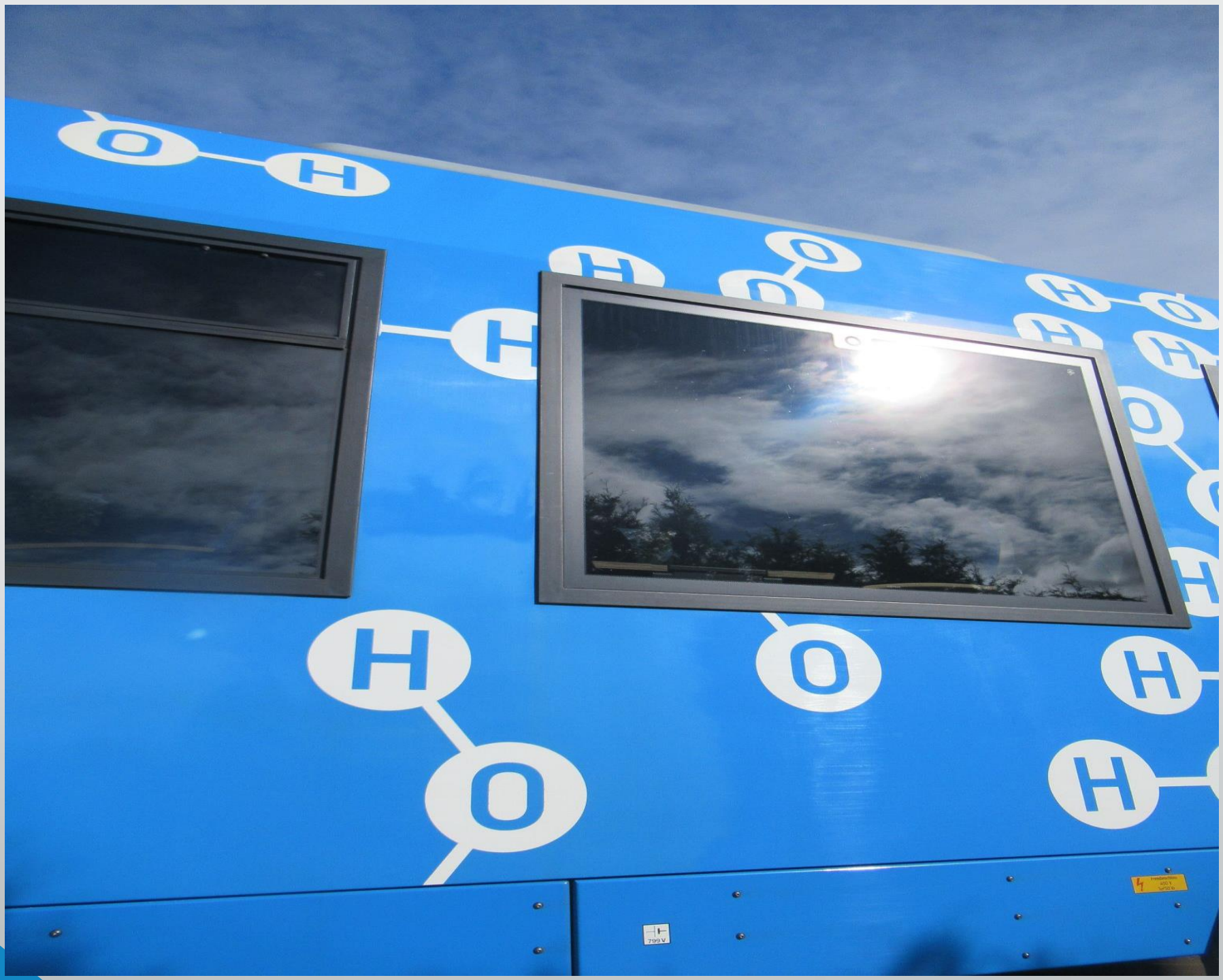


# **Train Package Deals**

- 1. 2 ½ hours Train trip**
- 2. Train and Hotels**
- 3. Train ride and guided tours**

# TRAIN STATION



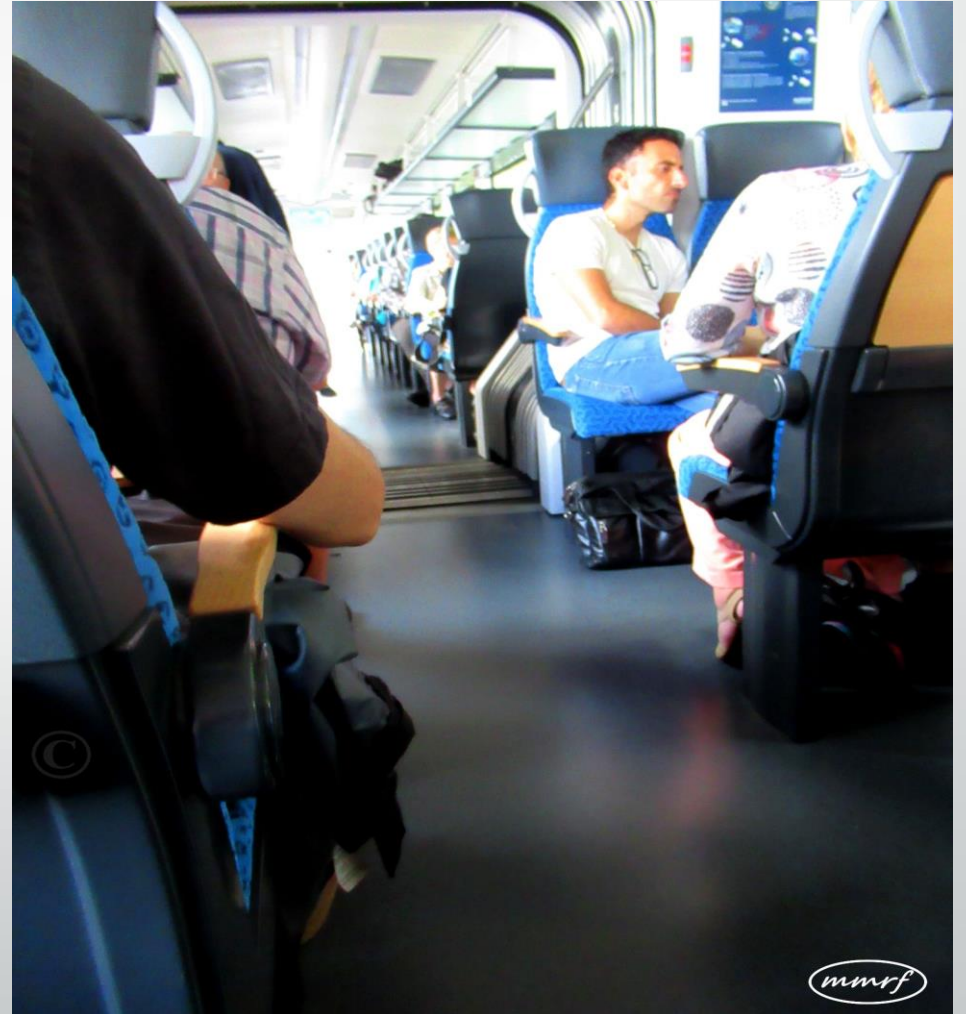


700V

WARNING  
ELECTRICITY  
DANGER



# THE ALLEY





# THE SEATING AREA



**My cousin and I**





# **MONTMORENCY FALLS**

## **QUÉBEC**









# St-Lawrence River











# **VILLAGE OF BAIE ST-PAUL**



# MAIN STREET

# HISTORIC HOUSE





©

*murf*

## BAIE ST-PAUL'S TERCENETARY PLATE



Photo : <https://www.patrimoine-culturel.gouv.qc.ca>



Photo: Expedia





Photo: Expedia



**TRAIN  
PERFORMANCE**

**In service since 2018**

**Top speed of 140 km/h**

**Acceleration and breaking  
performances comparable to  
a standard diesel train**



## CHALLENGES

- **Intermittent and unreliable energy efficiency**
- **High cost of vehicular applications**
- **Durability: Fast degradation of material and components of hydrogen storage tanks**
- **World's most significant greenhouse gas: water vapor emitted by fuel cells**

## **SOMETHING TO CONSIDER**

**“The International Energy Agency indicates that in 2021, global hydrogen production emitted 900 million tonnes of carbon dioxide — roughly 180 million more than the aviation industry — as roughly 99 per cent of hydrogen production came from fossil fuel sources.”**

<https://www.electricityforum.com/news/canada-hydrogen-future>

# CLAIM

- No greenhouse emissions during operation
- No noise
- No vibration
- No air pollution

# REFERENCES

<https://traindecharlevoix.com/en/train-a-lhydrogene/>

<https://www.alstom.com/press-releases-news/2023/2/alstoms-coradia-ilint-worlds-first-hydrogen-powered-passenger-train-will-demonstrate-green-traction-quebec>

<https://www.alstom.com/press-releases-news/2023/10/alstom-concludes-successful-demonstration-first-commercial-service-hydrogen-powered-train-north-america>

<https://www.twi-global.com/technical-knowledge/faqs/what-is-a-hydrogen-train>

[https://www.californiahydrogen.org/wp-content/uploads/files/doe\\_fuelcell\\_factsheet.pdf](https://www.californiahydrogen.org/wp-content/uploads/files/doe_fuelcell_factsheet.pdf)

<https://www.electricityforum.com/news/canada-hydrogen-future>

<https://www.popularmechanics.com/science/energy/a926/4199381/>

[https://astforgetech.com/how-to-store-transport-hydrogen-the-ultimate-guide/#Hydrogen\\_Transportation](https://astforgetech.com/how-to-store-transport-hydrogen-the-ultimate-guide/#Hydrogen_Transportation)

<https://www.energy.gov/eere/fuelcells/liquid-hydrogen-delivery>

<https://www.sciencedirect.com/science/article/abs/pii/S0360319919331672>



**Prepared by**

**Michelle Faber**

**January 30th, 2024**