

# HB 223 - Alternative Fuels Incentive Amendments

- Roxana Bekemohammadi  
Executive Director  
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# Background on WSHA

WSHA operates with the following core principles:

- Serving as a thought leader on the mass deployment of fuel cells and hydrogen across the Western States
- Educating policymakers on the advantages of hydrogen and fuel cells
- Ensuring economic synergies between states and the hydrogen and fuel cell industry

# WSHA Members



# Why Hydrogen & Fuel Cells?

## National Trends Influencing Energy Policy and Industries

- Internal combustion engines are being phased out
  - Fuel cells can operate on hydrogen, a by-product of oil and gas production
  - Fuel cells require platinum as a catalyst, which is derived from UT's most plentiful mineral copper
  - Fuel cells electric vehicles are electric like batteries, zero emission like batteries, but has greater application in all mobility applications
- Building electrification is gaining traction
  - Natural gas can be converted to hydrogen and provide a decarbonized gaseous solution that provides the reliability of natural gas

# Emerging Market Potential

## Bank of America

*"We believe that hydrogen is going to take 25% of all oil demand by 2050"*

<https://www.cnbc.com/2021/01/22/hydrogen-will-take-25percent-of-oil-demand-by-2050-bank-of-americaanalyst.html>

## Goldman Sachs

*"Addressable market for green hydrogen is \$10 trillion by 2050"*

<https://www.goldmansachs.com/insights/pages/green-hydrogen.html>

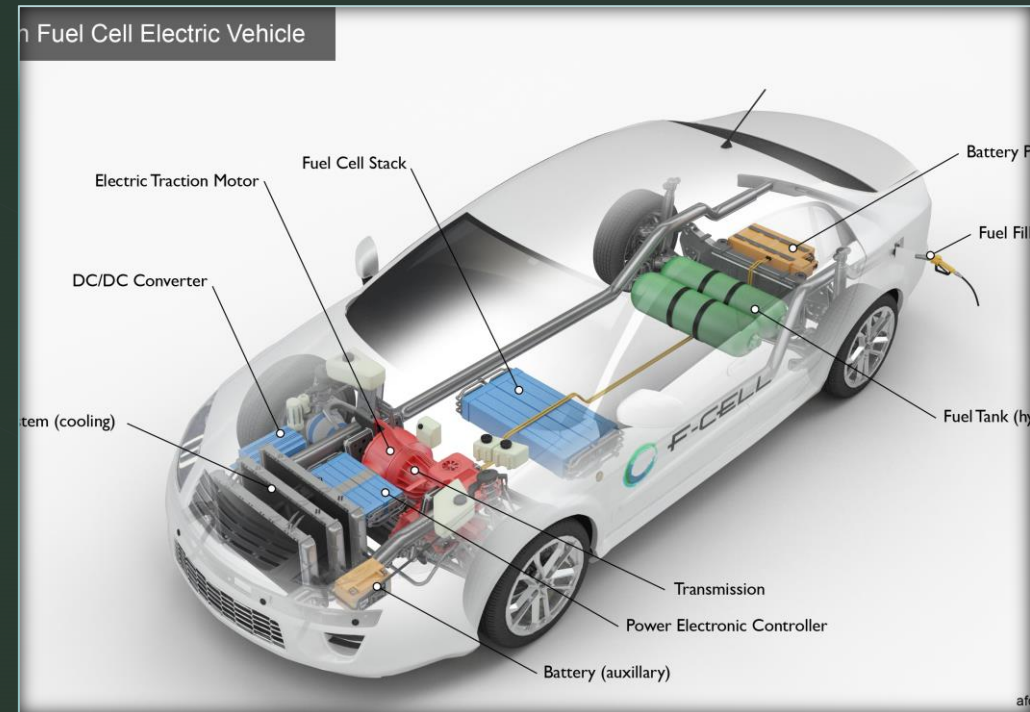
## European Commission

Promoting \$470 billion in renewable hydrogen investment by 2050

<https://www.forbes.com/sites/mariannelehnis/2021/12/31/the-eu-is-investing-550-billion-in-hydrogenbut-whatsthe-future-of-the-hotly-contested-energy-source/?sh=4302b34613d7>

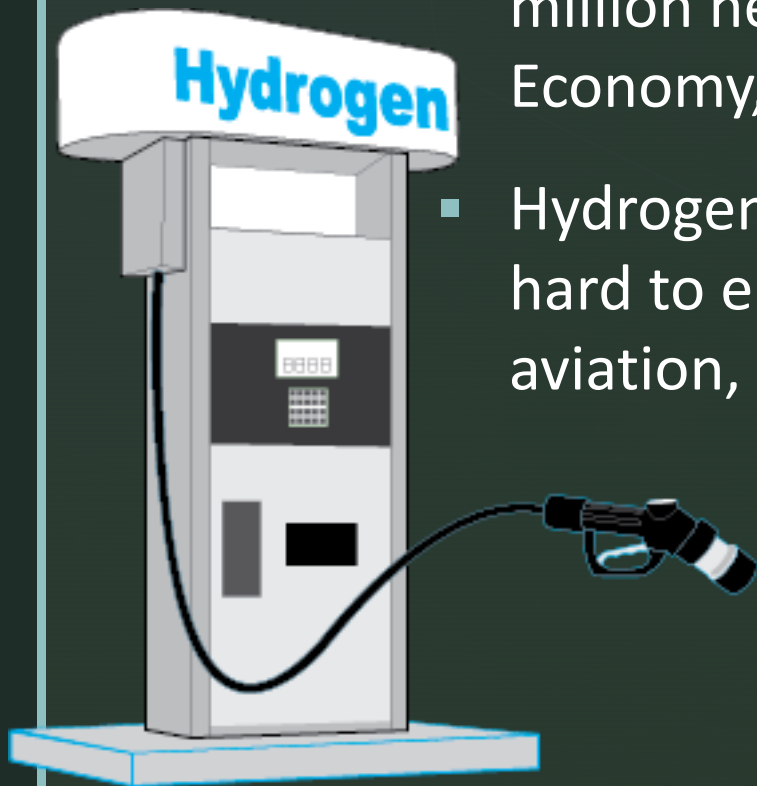
# How It Works

- ❑ Hydrogen Fuel Cells combine hydrogen with oxygen through the use of a fuel cell. This reaction creates electricity that can then charge batteries
- ❑ Fuel Cell Electric Vehicles have a few distinctive features that allow hydrogen to power the vehicle
  - ❑ Use of fuel cell(s)
  - ❑ Battery pack
  - ❑ Electric Motors
  - ❑ Hydrogen Storage Tanks
- ❑ The byproduct of hydrogen fuel cells is water, not traditional smog



# Hydrogen Market

- Hydrogen could enable a market of \$750 billion with 3.4 million new jobs (“Road Map to a US Hydrogen Economy,” McKinsey & Co.)
- Hydrogen also addresses industries that are typically hard to electrify, such as trucking, bussing, locomotive, aviation, maritime, and off-road equipment.







# Contact Information

Roxana Bekemohammadi – Executive Director

- Email: [Roxana@westernstateshydrogen.org](mailto:Roxana@westernstateshydrogen.org)
- Phone: 818 – 642 – 8064

# Questions?

