Serving our customers



Growing the Green Hydrogen Economy 12/15/2021 Chris Robinson, General Manager & Chief Operating Officer



The Case for Tacoma as a Green Hydrogen Hub

- Tacoma is on the I-5 corridor with good access for long-haul truck fueling.
- Tacoma is well-situated with a seaport, rail lines, robust water supply, clean low-cost electricity supply, and a skilled workforce.
- Joint Base Lewis-McChord is a possible customer of clean fuels.



Why is Tacoma Power Interested in Green Hydrogen?



Regional Trains

Heavy-Duty Trucks



Long Range Vehicles

Heat for Buildings & Industry



Industry Feedstock

- Green electrolytic hydrogen has multiple end uses – as a clean fuel to decarbonize transportation and as a source of electricity to help stabilize the electric grid.
- In our service area, green electrolytic hydrogen is a potential fuel source for longrange trucking, bus routes, shortline rail, maritime vessels in port, and building/industry heating.
- Green electrolytic hydrogen produced from water and Tacoma Power's clean electricity would boost retail sales.



Tacoma Power's Electrofuels Rate

- Tacoma Power created a rate to support electrofuels production.
- The electrofuels rate has generated national and international interest (prospects in production, storage and distribution, and interest from end users).
- Electrolytic technology can be interrupted with very short notice and for extended periods of time. Recognizing this ability in the rate allows Tacoma Power to provide a discounted electric service rate.
- Large flexible loads help use surplus renewable energy and help stabilize the electric grid.
- The DOE included our rate in its summation of the attributes that support PNW as a potential federal green hydrogen hub.



Obstacles for Hydrogen Producers

- The market is nascent and requires investment (e.g. tax credits and grants) to attract producers and to create customer demand (e.g., commissioning new and converting heavy-duty state vehicles/vessels, funding fueling stations).
- Siting, land use zoning, public perception, and permitting are all obstacles.
- Reliance on 100% private investment for an emerging industry with broad based societal benefits is a challenge.
- Finding adequately sized industrial sites near urban load centers can be challenging.



Federal Opportunities

- Federal *Infrastructure Investment and Jobs Act* enacted in November officially recognizes the critical role of green hydrogen in reducing GHG emissions and provides substantial financial support for its development via <u>competitive processes</u>:
 - \$8 billion to establish at least four regional clean hydrogen hubs that demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen;
 - \$500 million for advanced clean hydrogen manufacturing and recycling research and development; and,
 - \$1 billion toward R&D, demonstration, commercialization, and deployment of clean hydrogen from electrolyzers.
- *Build Back Better* legislation passed House, negotiations continue before Senate consideration:
 - \$200 million for hydrogen fueling equipment through State Energy Programs; and,
 - Authorize tax incentives for clean hydrogen.



State Opportunities

- We support state policies that:
 - Support green hydrogen development, including policy changes and funding; and,
 - Ensure Washington is in a competitive position to be a federal green hydrogen hub.
- Sen. Carlyle's green hydrogen policy bill is expected to contain provisions to establish Washington as a national and global leader in green hydrogen production (coordination, siting/permitting, and pilot project funding).
- Rep. Ramel's bill (HB 1569)
 - Creates a state definition of "Green Electrolytic Hydrogen";
 - Expands existing clean energy and technology state tax (sales, use, leasehold) exemptions to "Green Electrolytic Hydrogen" production facilities; and,
 - May clarify that municipal utilities have the same authority as PUDs to produce and distribute renewable and green electrolytic hydrogen.
- Potential for project funding through the state budget.



Summary and Next Steps

- No single entity can ensure the development of a robust green hydrogen industry and greater coordination among all levels of government, industry partners, and advocacy organizations is vital.
- Tacoma Power is working with state and regional cluster organizations (Charge, Washington Maritime Blue, etc.).
- Tacoma Power has joined advocacy organizations such as the Renewable Hydrogen Association and the newly-created Washington Green Hydrogen Alliance.
- Continued economic development work with interested producers and other businesses.
- Education, outreach, and advocacy with the Tacoma/Pierce County community.
- The Director has created a "Roadmap to Electrofuels" team to ensure coordination across TPU.



Questions?





Appendix

• Definition of green electrolytic hydrogen: hydrogen produced through electrolysis, and does not include hydrogen manufactured using steam reforming or any other conversion technology that produces hydrogen from a fossil fuel feedstock. (HB 1569, 2021)

