## Schedule EF

#### **Overview of Planned Modifications**

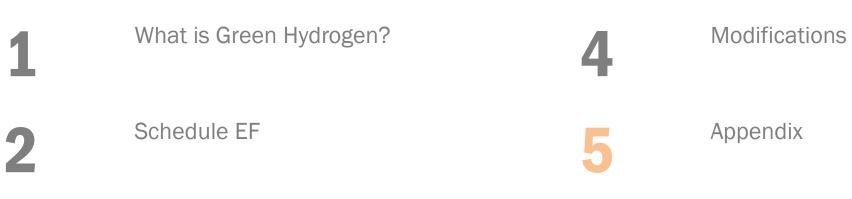
Ray Johnson Deputy General Manager, Power Management



Market, reliability, and regulatory paradigms have changed radically since we offered a pilot rate tariff for green hydrogen producers (Schedule EF). Today, providing service under this tariff will result in large cost shifts to existing customers.

Tacoma Power will modify design of Schedule EF to eliminate cost shift

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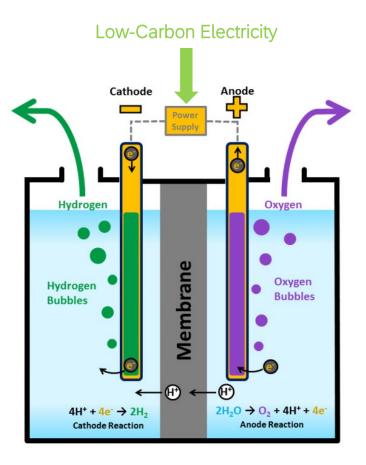
Key Changes

# What is Green Hydrogen?

#### What is Green Hydrogen?

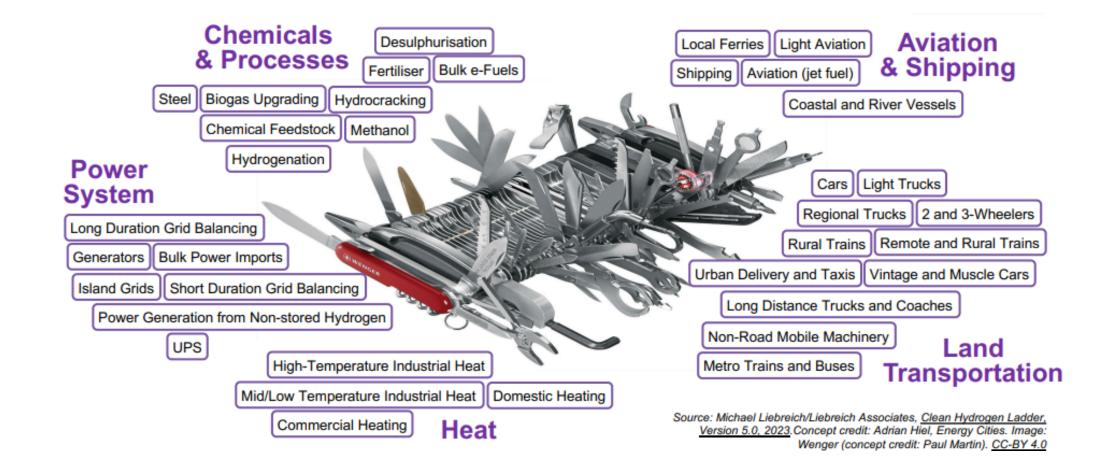
### What is green hydrogen?

- Hydrogen can be produced using electrical energy to split water molecules in a process known as electrolysis, creating only oxygen as a by-product
- If the electrical energy is made from renewable sources – for example wind and solar energy – then the process is close to zero emissions and called renewable hydrogen. It is often also referred to as 'green hydrogen'
- Many governments and businesses believe that a clean hydrogen economy could be the key to the energy transition.



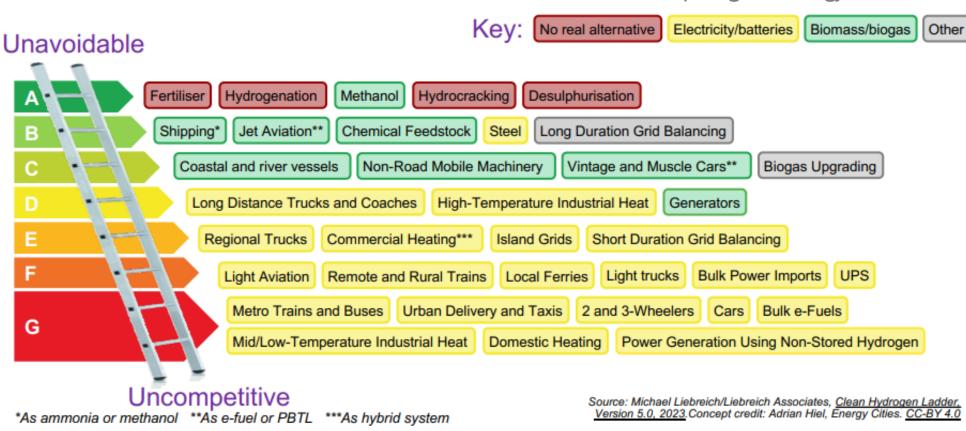
What is Green Hydrogen?

### What could it be used for?



What is Green Hydrogen?

### Some use cases are more likely than others



Competing Technology

# Schedule EF

### Schedule EF Schedule EF Overview

- In 2021, Tacoma Power established Schedule EF a pilot rate tariff specifically designed for companies producing green hydrogen
- Schedule EF is a derivative of our Contract Power tariff
- Schedule EF requires the customer to allow their electrical usage to be curtailed periodically in exchange for discounts to the rate

TACOMA POWER			
SCHEDULE EF			
ELECTROFUEL SERVICE PILOT			
12.06.373			
A. APPLICABILITY.			
For new loads with power used for the electrochemical production of fuels usable for transportation or electrical energy storage, where a demand meter is installed, and where the customer does not require the use of Tacoma Power's distribution facilities. No more than 65 MW of total load shall be served on this schedule. Unless otherwise extended, this rate schedule shall be closed to new customers in 2030.			
B. AVAILABILITY.			
Upon the execution of a written Power Service Agreement (Contract) with Tacoma Power, which shall require, among other conditions:			
1. Curtailment of the load upon request of Tacoma Power within 10 minutes or less;			
<ol><li>A maximum number of hours for which Tacoma Power is entitled to curtail load. Such maximum shall be no less than 1,318 hours per year, and Tacoma Power shall reserve the right to elect to curtail for fewer hours;</li></ol>			
3. Penalty for failure to curtail load according to Contract requirements;			
<ol><li>Delivery of power at one primary voltage;</li></ol>			
5. Metering at primary voltage but in no case at less than nominal 4,160 volts; and			
6. Power factor adjustment to 95 percent lagging or better.			
Provisions described above reflect the minimum stringency of Contract terms; additional terms will be added as determined necessary by Tacoma Power.			
C. MONTHLY RATE.			
The sum of the following energy, delivery, and customer charges:			
<ol> <li>Energy: All energy measured in kilowatt-hours at \$0.033147 per kWh.</li> </ol>			
<ol> <li>Delivery: All kilowatts of Billing Demand delivered at \$5.72 per kW.</li> </ol>			
<ol> <li>Customer Charge: Calculated on a monthly basis, invoiced, and collected pursuant to the applicable customer service policies: \$7,445.00 per month.</li> </ol>			
Ordinance No. 28706 Effective: April 1, 2021			
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Schedule EF What was required to qualify?

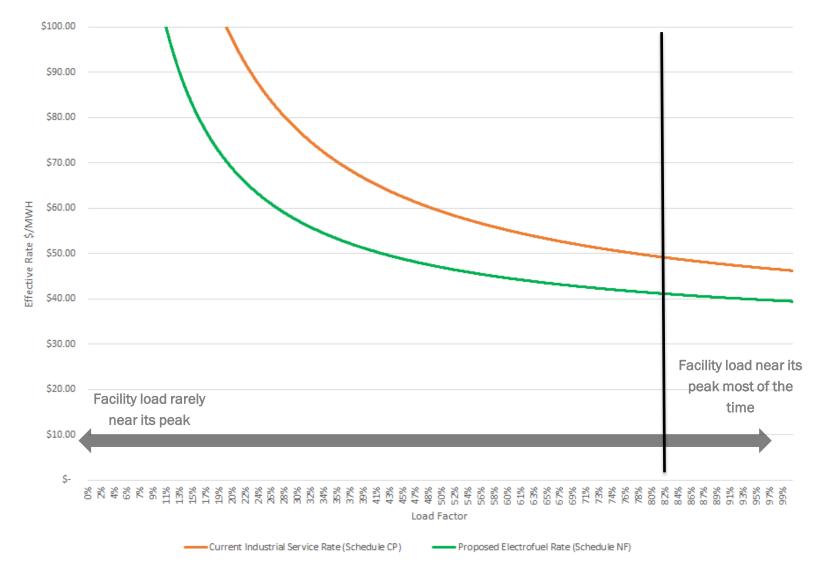
Customer must be willing to curtail operations for a minimum of  $\underline{15\%}$  of hours during the year

<u>10-minute</u> notice would be given before a curtailment

Limited to <u>65 MW</u> on first-come, first-served basis

#### **Schedule EF**

### Schedule EF pricing



#### **Overview**

 ✓ Schedule EF is Schedule CP less a discount for DR.

 ✓ Schedule CP and Schedule EF are priced on an <u>embedded</u> cost basis.

### Key changes since Schedule EF was established

- High wholesale market prices
- Limited power supply options; high costs

Market

- Uncertainty around the next BPA contract
- Potential loss of the Slice product

- Washington Climate
   Commitment Act (CCA)
- Western Resource Adequacy Program (WRAP)
- Federal Tax Credit

- Changes to Tacoma Power large industrial rate schedules for loads above 10 aMW
- Updates to Electric Rate & Financial Policy prohibiting cost-shifting

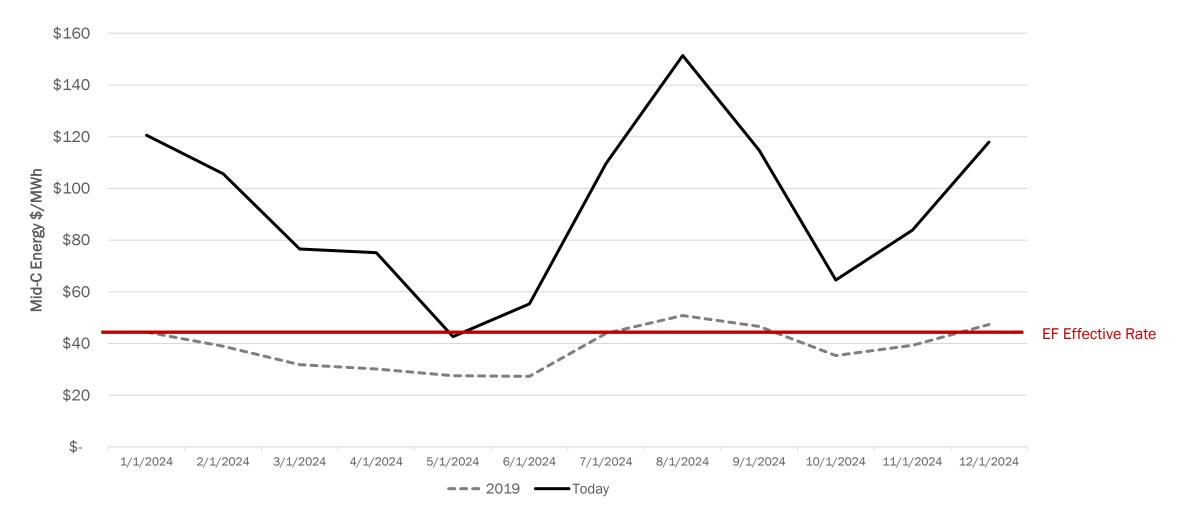
Policy & Rate Design



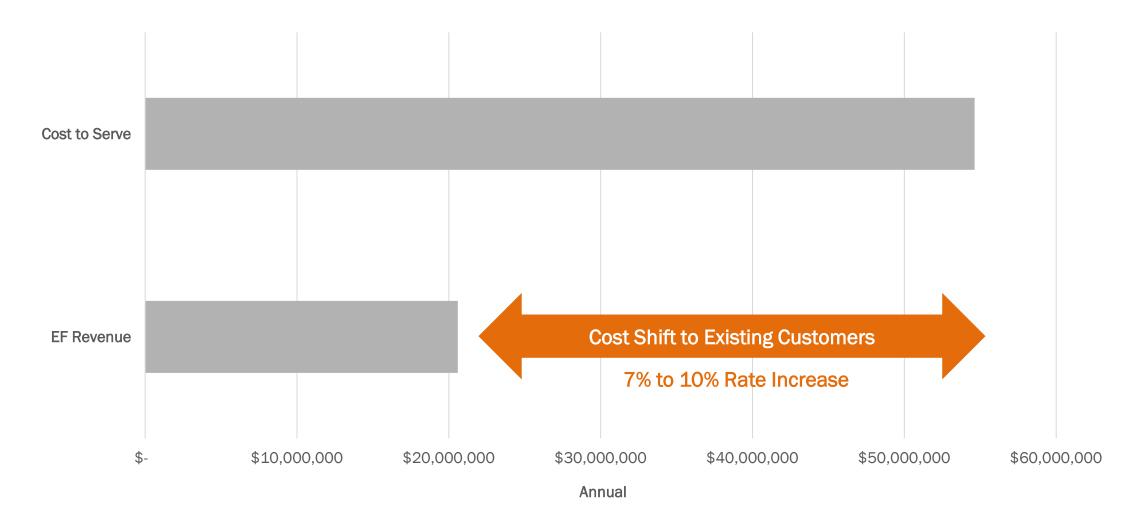




### Wholesale prices have increased since Schedule EF designed



### EF service results in large cost shift



# Modifications

#### **Modifications**

### **Planned modifications**

- We intend to change the Schedule EF pilot rate from its current design to a design that is similar to our new Very Large Load Service (Schedule VLL).
- Schedule VLL passes through new power supply resource acquisition costs to serve the customer consistent with modern day rate pricing for large loads

Energy Charge	Tacoma Power's incremental cost of acquiring power to serve the customer's load
Demand Charge	Tacoma Power's incremental cost of acquiring power capacity to serve the customer's load
Delivery Charge	Applicable delivery charge on Schedule CP if local distribution service is not required, or Schedule G if local distribution service is required
Fixed Charge	Applicable customer charge on Schedule CP if local distribution service is not required, or Schedule G if local distribution service is required
Demand Response Rider	Tacoma Power will offer to purchase demand response from an EF Customer. Pricing will correspond to the capability of the facility to be interrupted and the value of the curtailment. This will result in a credit on the power bill.

### 45V proposed rulemaking – electricity and EACs

- Treasury proposed rulemaking allows use of energy attribute credits (EACs) for electrolytic hydrogen using gridconnected electricity to meet the lifecycle analysis levels of the credit
- The guidance lays out three primary requirements for producers using EACs

   Incrementality, Temporal Matching, and Regionality.
- Incrementality: The proposed incrementality rule requires clean hydrogen producers to only purchase EACs from new sources of clean power that begin commercial operations within three years prior to a hydrogen facility being placed into service. The proposed rule also allows for certain newly added capacity or uprates to qualify.
- Temporal Matching: The proposed temporal matching rule allows for annual matching of EACs until 2028, after which it will move to an hourly basis.
- Regionality: The proposed regionality rule requires EACs to be sourced from within the same region as the hydrogen producer.

45V proposed rulemaking – regions



### Market prices are much higher than the EF rate

