

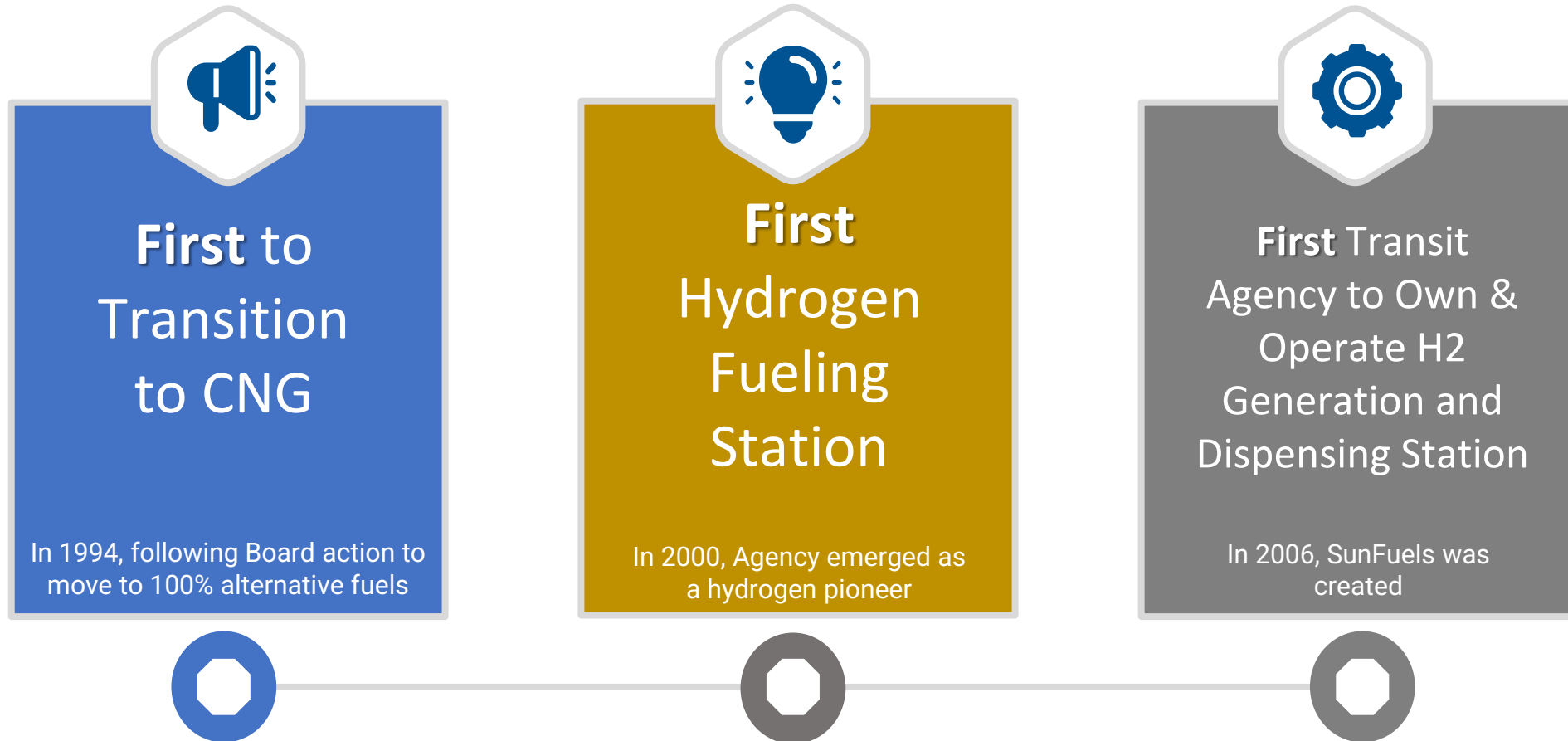


AUGUST 2, 2022

TRANSIT TALKS

COMPLETING CARB'S ZERO-EMISSION BUS ROLLOUT PLAN,
A SMALL AGENCY PERSPECTIVE

Hydrogen Leader

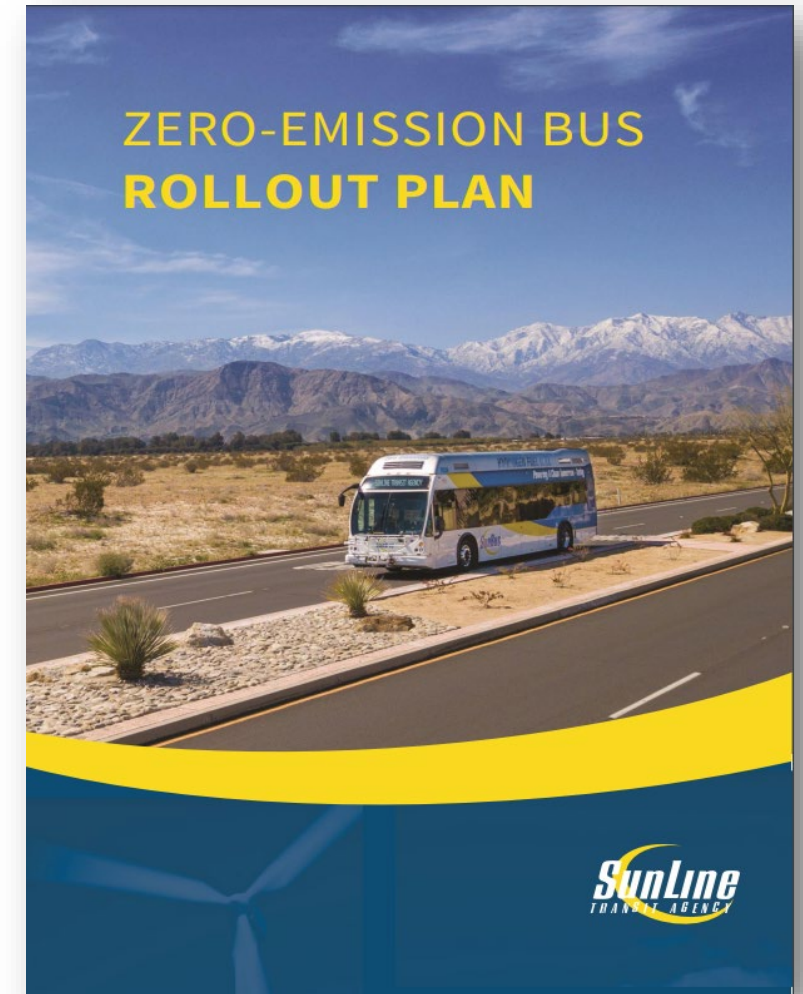


SunLine's ICT Plan

- SunLine submitted plan to California Air Resources Board in June 2020, three (3) years ahead of deadline

VISION

- SunLine will be the first transit agency in the state/country to transition fleet to 100% zero-emission vehicles



SunLine's ICT Plan

SunLine's is poised to lead the country in fuel cell electric bus (FCEB) and battery electric bus (BEB) deployments and demonstrate the effectiveness of a zero-emission fleet

Fixed route fleet 100% ZEB by **FY-2035** – 67 FCEBs, 18 BEBs

Paratransit fleet 100% ZEB by **FY-2033** – 39 FCEBs, 0 BEBs



ZEB Fleet Comparison

BATTERY ELECTRIC BUS

BENEFITS

- Low maintenance and infrastructure cost at start
- Choices for vehicle types

CHALLENGES

- Weight
- Range
- Charging time
- Peak demand rates
- Long term costs

FUEL CELL ELECTRIC BUS

BENEFITS

- Fuel economy
- Acceleration + range
- Fueling times and techniques comparable to CNG

CHALLENGES

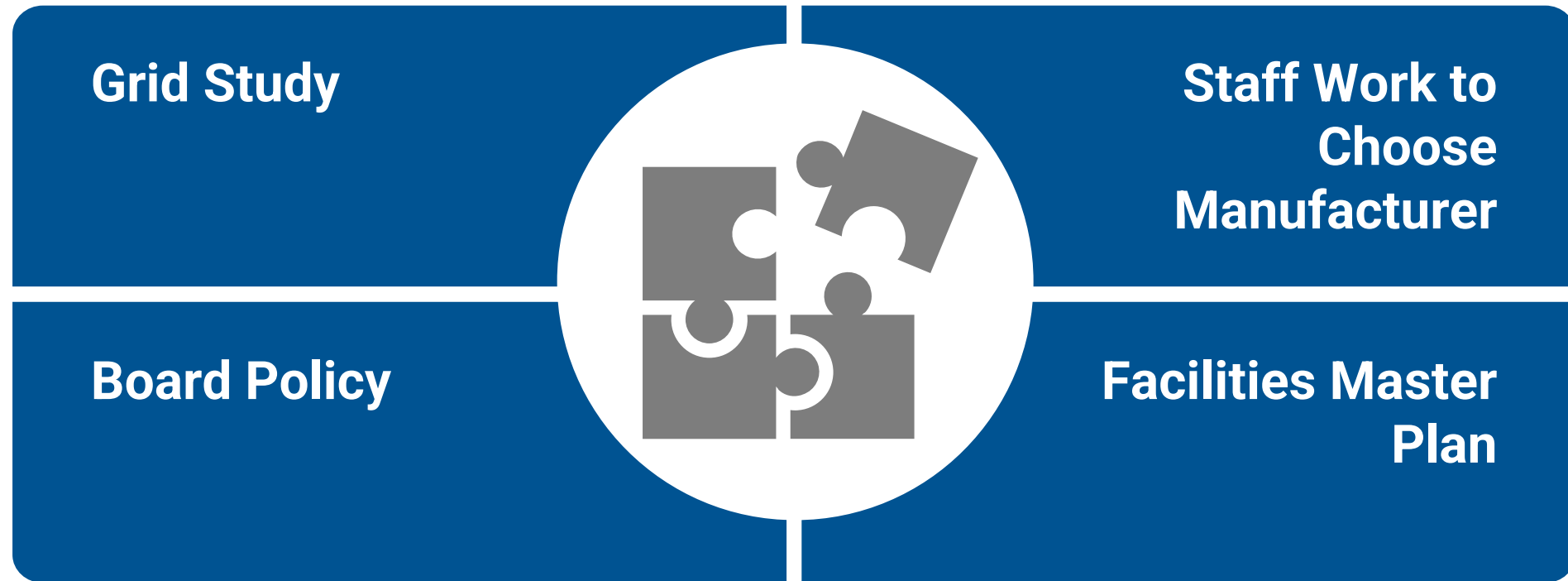
- Upfront cost for vehicle + infrastructure
- Non-standard vehicle availability (i.e. paratransit/over the road)

Why SunLine is Centering on FCEBs

- 1:1 replacement for CNG
- Procurement is the same for fuel
- Range is up to 350 miles
- Utility and fuel times are the same as CNG



Prequel To A ZEB Project



Importance of Facilities Master Plan

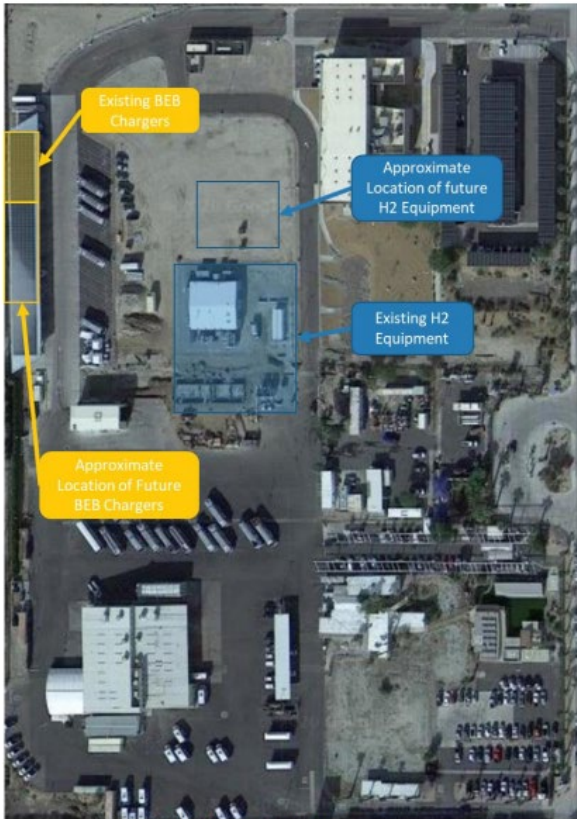


Figure 4. SunLine Thousand Palms Facility Site Overview

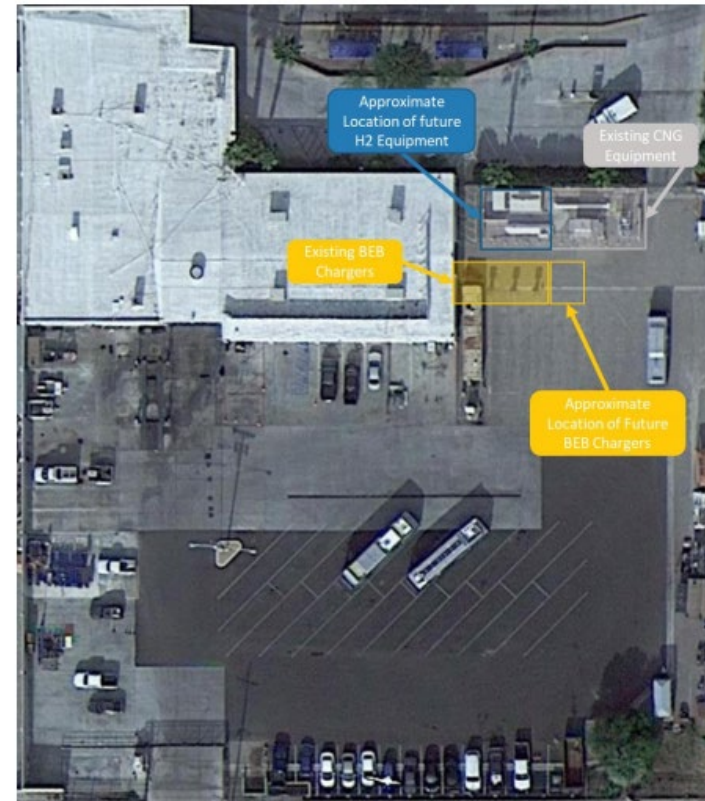


Figure 5. SunLine Indio Facility Site Overview

Steps for Successful ZEB Deployment



Expanding Access to Zero Emission

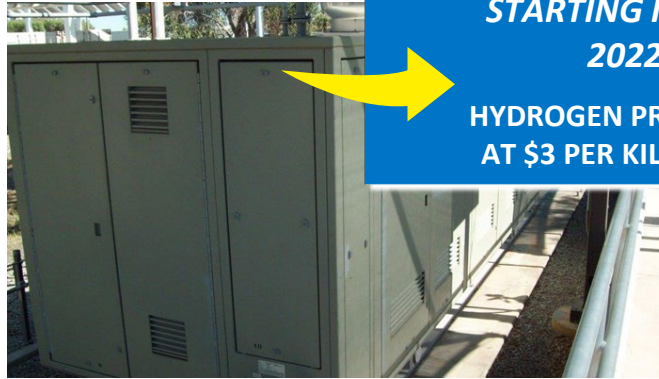
SunLine's Fueling Projects



*COMMISSIONING
IN 2020*

NEW METHOD

ELECTROLYZER



*PROJECT
STARTING IN June
2022*

HYDROGEN PRODUCED
AT \$3 PER KILOGRAM

SOCALGAS: HYDROGEN FUELING
DEMONSTRATION PROJECT

**STEAM METHANE
REFORMER**

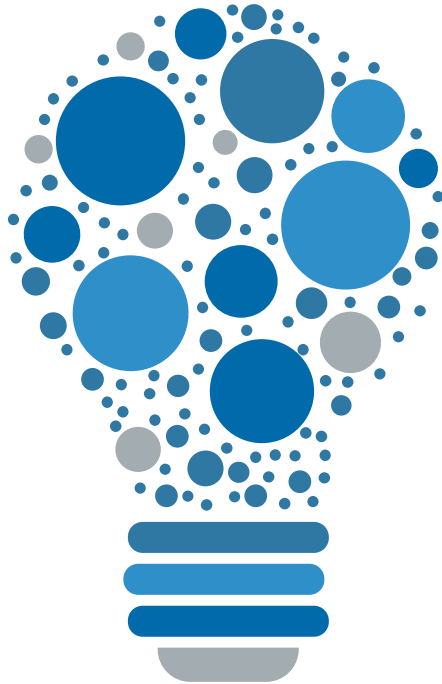


*PROJECT
STARTING IN
2022*

CEC: ZERO-EMISSION TRANSIT FLEET
INFRASTRUCTURE DEPLOYMENT

**LIQUID HYDROGEN
FUELING STATION**

What's Possible?



Low Carbon Fuel
Standards Credits
(LCFS)

Potential for Future
Renewable
Identification Numbers
Credits (RINS)

Fuel Sales Revenue

Expansion and New
Project Funding

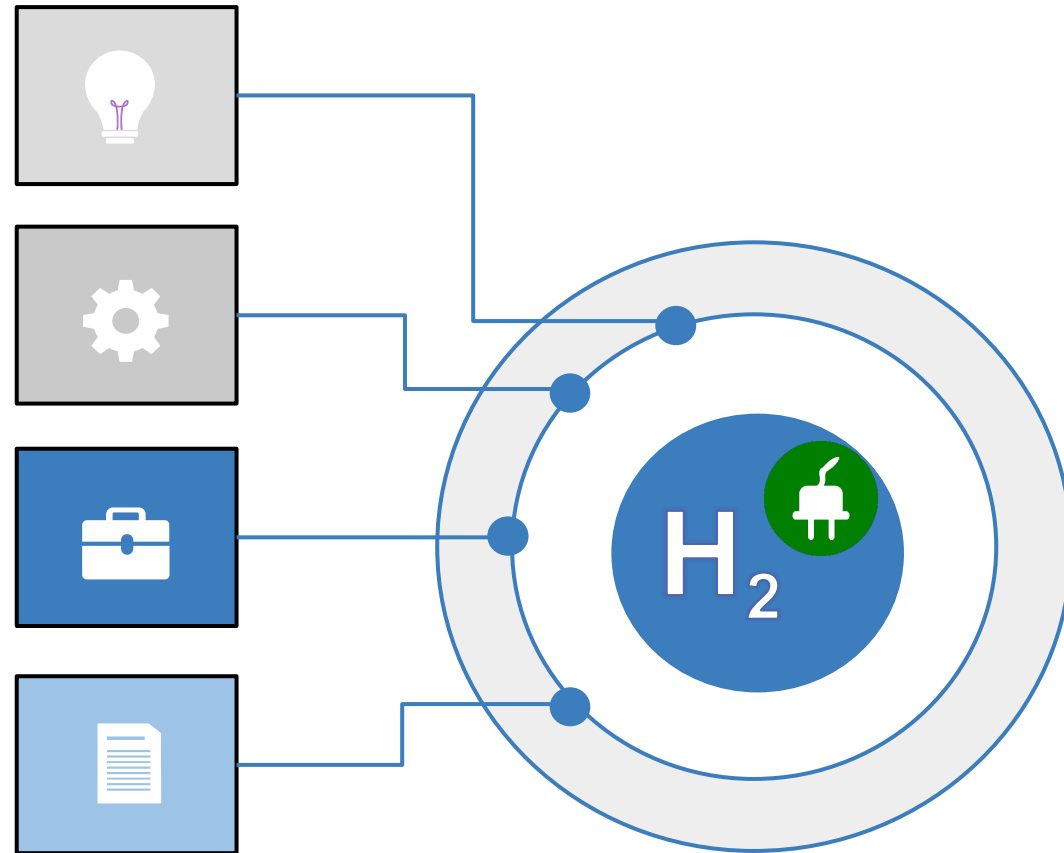
What Technicians Need For The Future

Basic building blocks that provide a clear understanding

Practical experience with key components and testing equipment

Portable and in-class options

An electronic warehouse for information shared amongst operators



Thank You



Questions?

Visit [SunLine.org](https://www.sunline.org)

Email lskiver@sunline.org

Call **760-343-3456**

