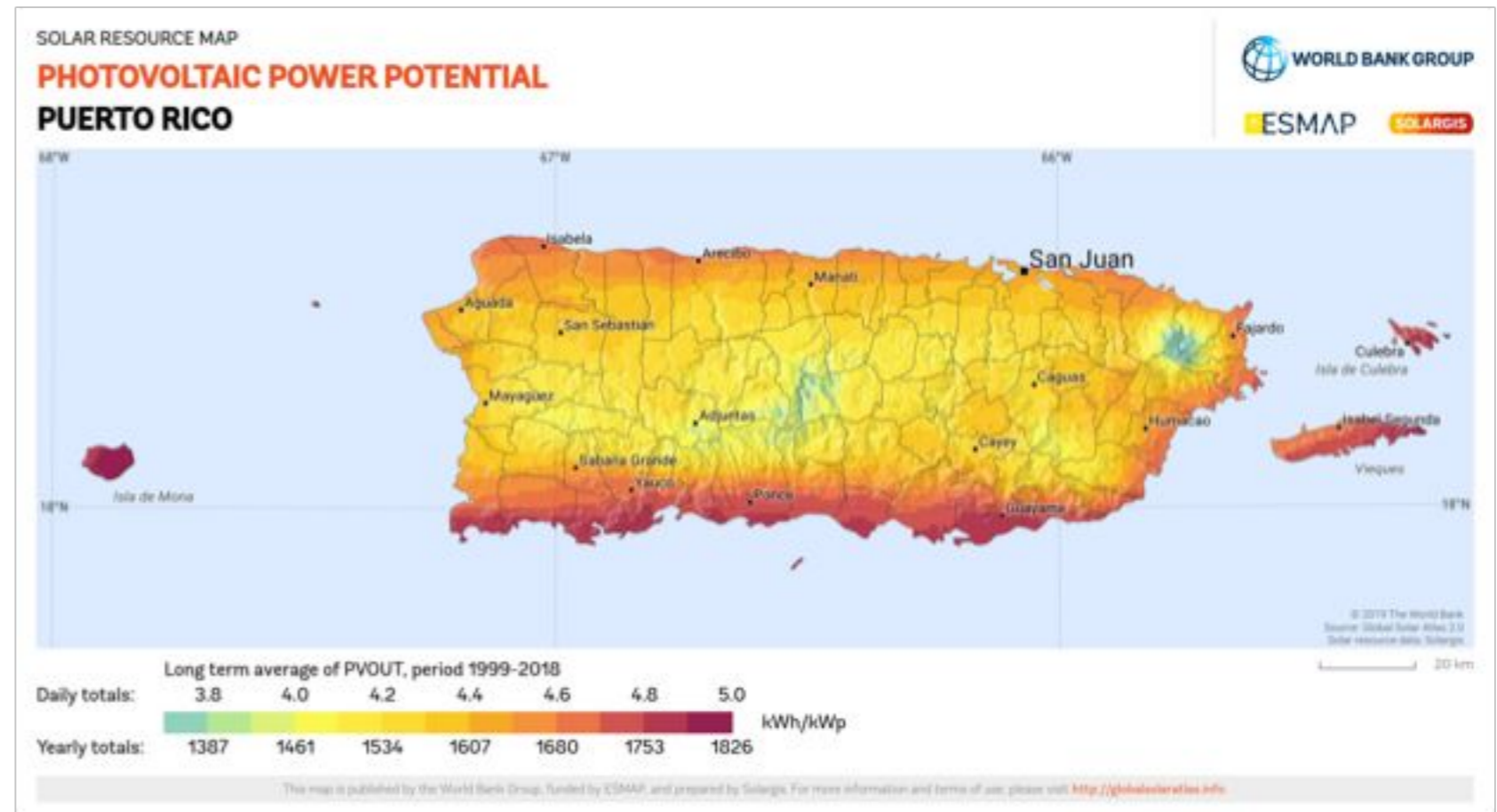


Solar-Hydrogen: A Resilient & Sustainable Energy Infrastructure

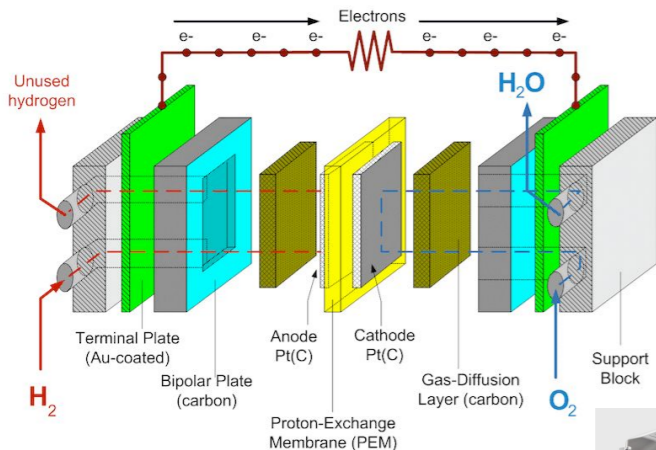


Puerto Rico
Energy Week
February
21-24, 2023
San Juan





Solar Hot Water
Cleans PV Arrays



**RELIABILITY
TO RESILIENCE**
Confronting the Challenges
of Extreme Weather

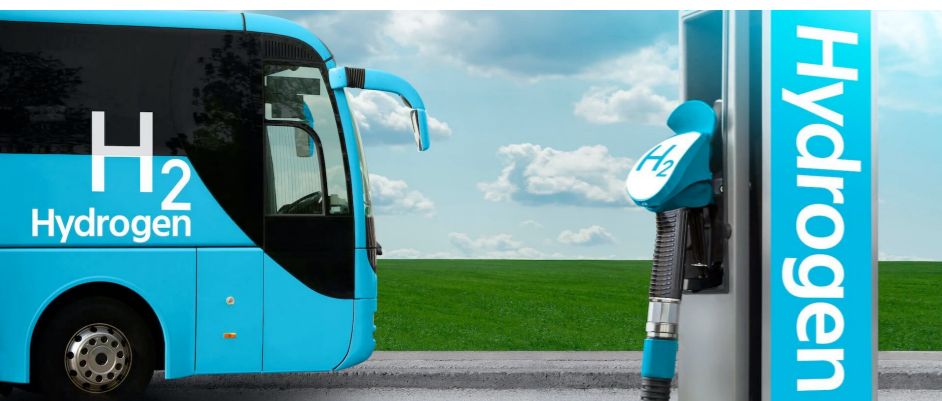


Fuelcell Engines
Generate
Reliable Power

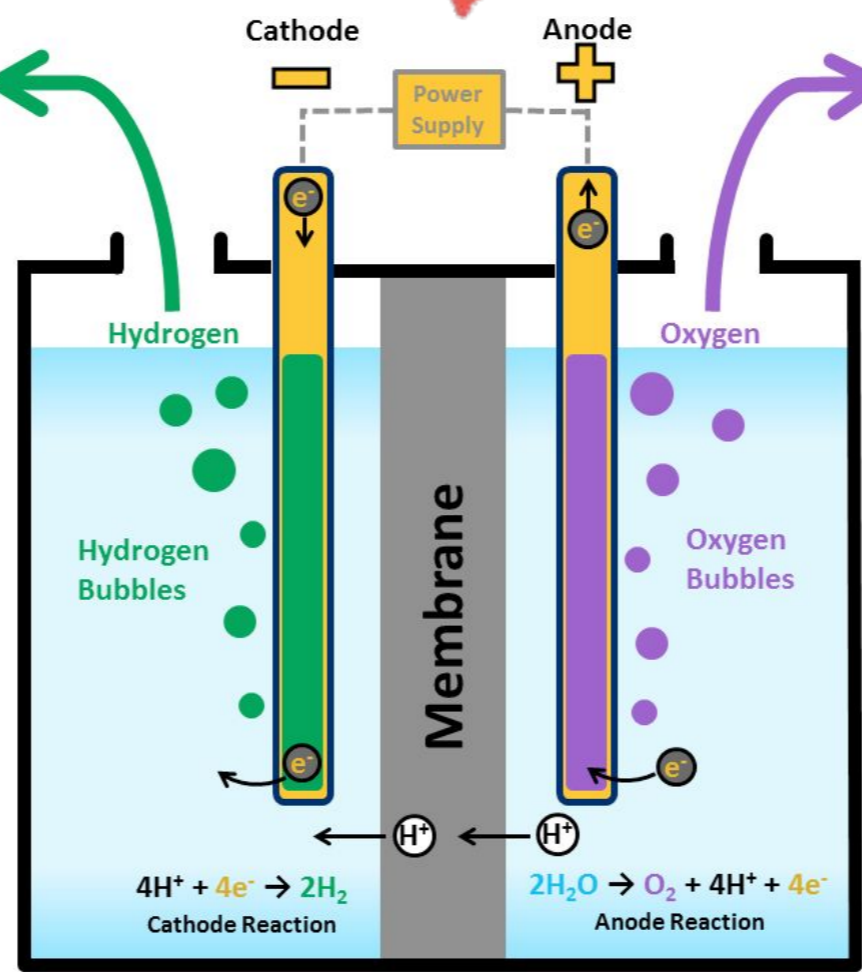
DC
Electricity

**RESPIRATORY
CARE**

Pure O2 For Human Health
And For Water Treatment



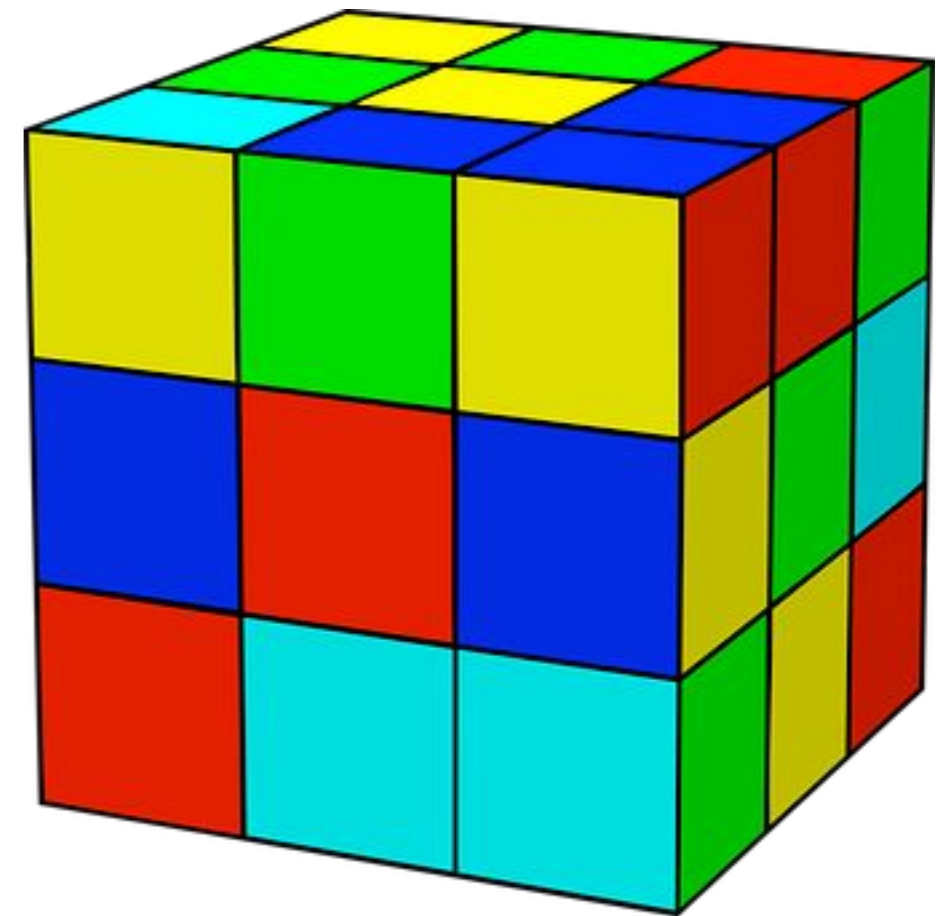
Hydrogen Decarbonizes
Transportation



Electrolysis Splits Water

Smart Key Performance Indicators (KPIs)

- Specific: Electrolysis requires 60 kWh to produce 1 kg of hydrogen which has 3 x the energy content of diesel
- Measurable: Diesel fuel costs \$4.30/gallon which is equivalent to \$7.29/kg
- Attainable: Solar PV can generate the electricity necessary to electrolyze water and meet the diesel equivalent prices at \$.12/kWh cost of electricity from the solar array to the hydrogen facility
- Relevant: The Inflation Reduction Act provides a hydrogen production tax credit of \$.60/kg for projects that start before 2033
- Time Based: 10 Year Internal Rate of Return of a solar energized electrolysis project in Puerto Rico can attain >11.8% IRR.



Locally Produced Hydrogen Fuel Will Offset Diesel Use

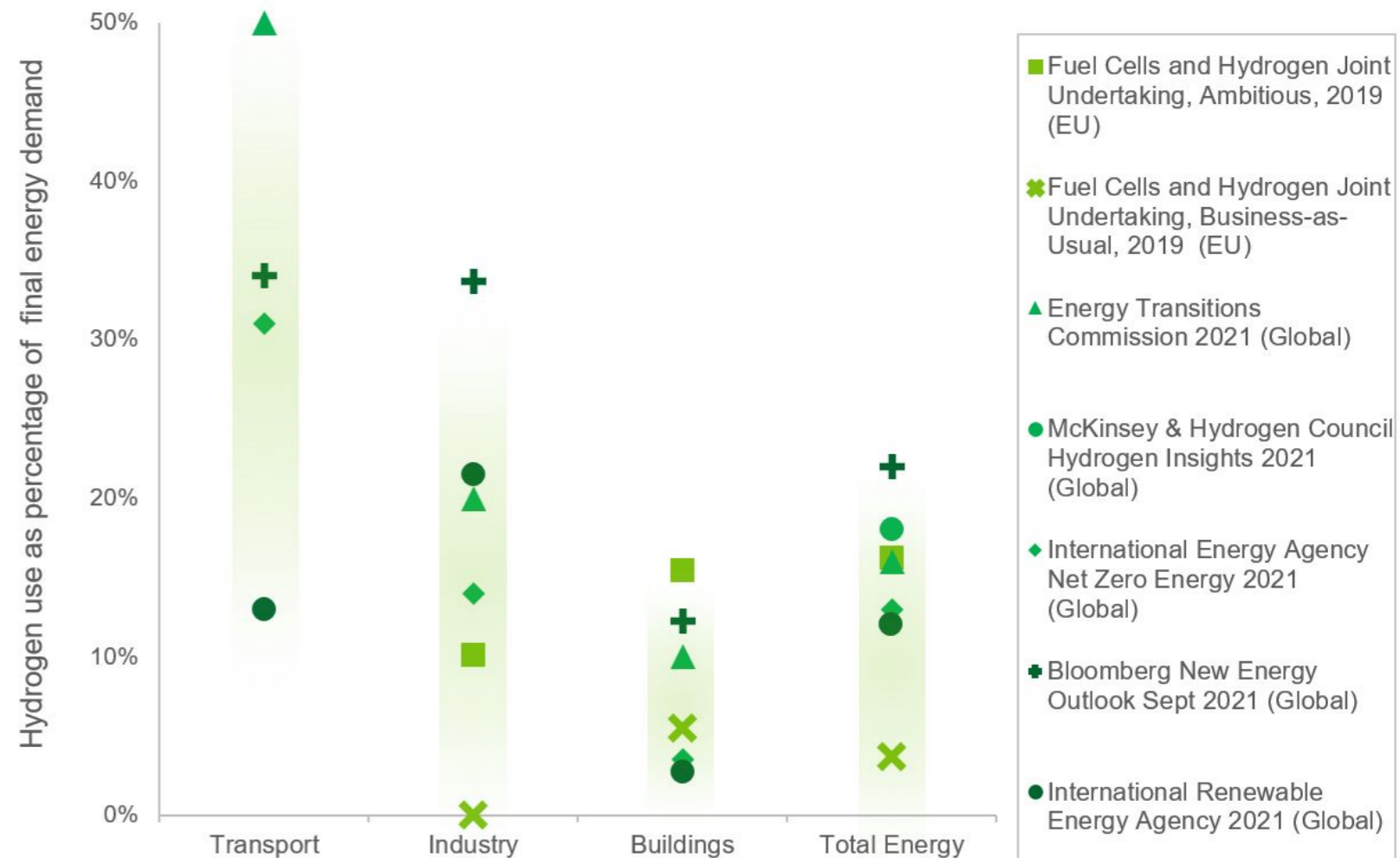


Benefits To Puerto Rico From Hydrogen Adaptation

- Attracting DoE Projects & Stakeholders
- Fueling Point For International Maritime Traffic
- Increasing Value Of Solar PV Investments By Converting Electricity Into Diesel Substitute
- Attracting Carbon Economy Investors Seeking Certifiable Credits In Deregulated Venue
- Driving Down Diesel Prices Through Competition
- Contributing To An Ecosystem Of Local Innovation



DOE National Clean Hydrogen Strategy and Roadmap



Total Energy includes transport, industry, buildings, and power sector uses