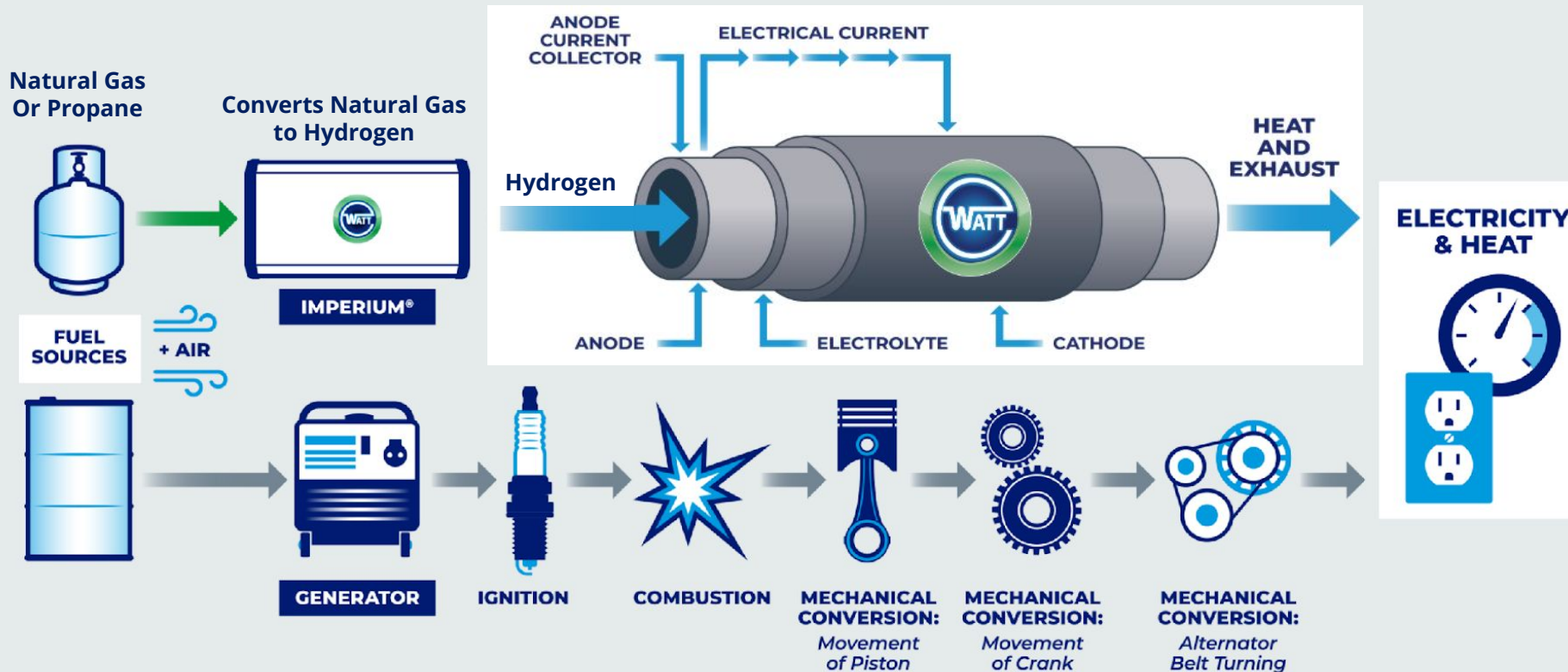


# INNOVATION

## Benefits of Fuel Cell Systems

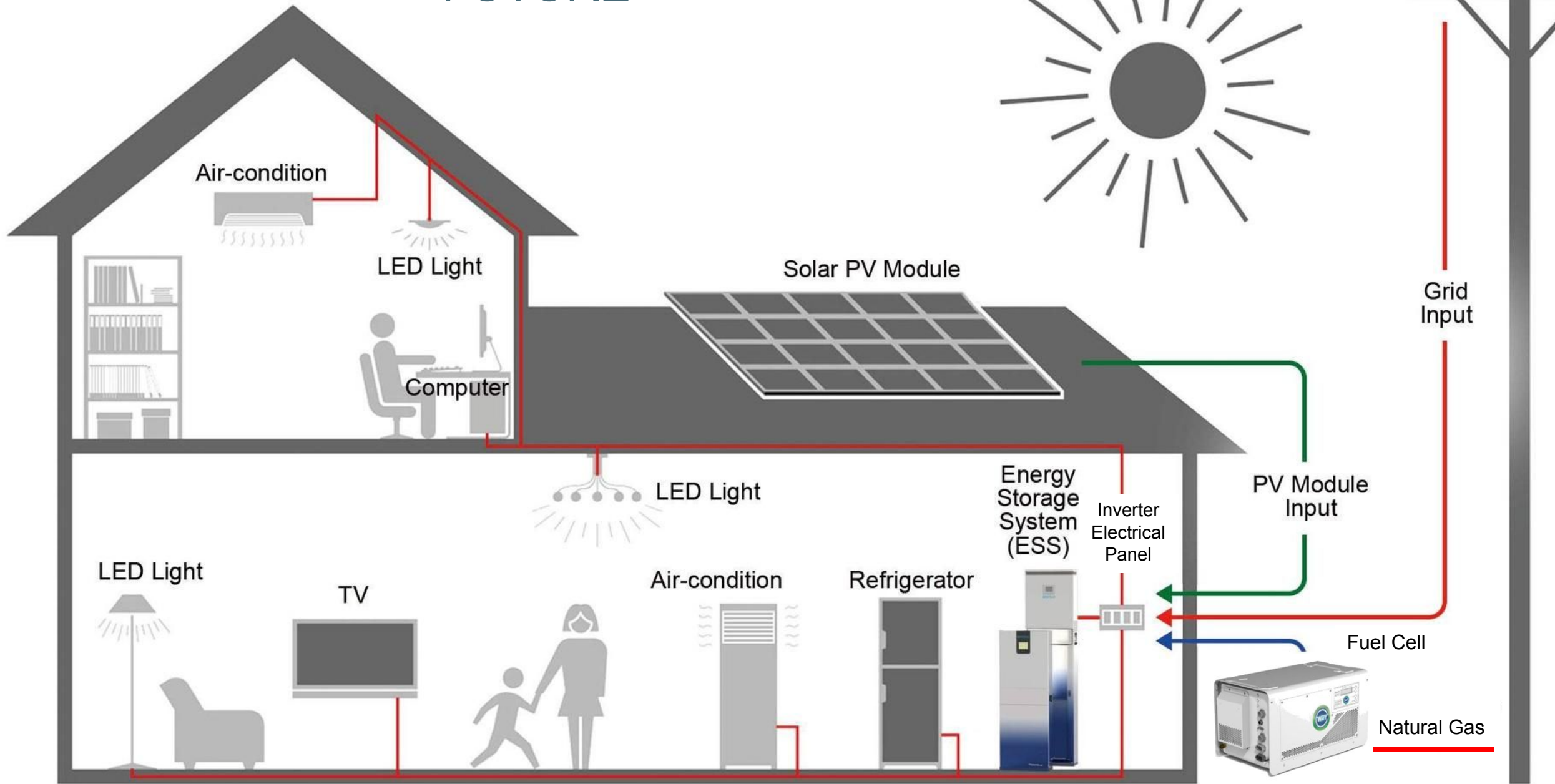


- **What are Fuel Cells?**

A fuel cell is an electrochemical device that converts chemical energy stored in fuels directly into usable electrical energy.

Fuel cells eliminate the additional conversion steps and provide usable electrical and heat energy directly from the stored chemical energy.

# RESIDENTIAL CONFIGURATION OF THE FUTURE



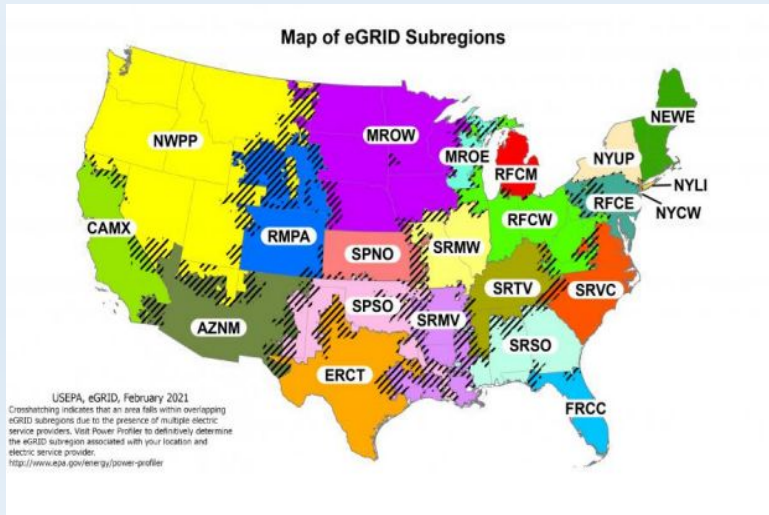
# WATT FUEL CELL

## Technology and Benefits

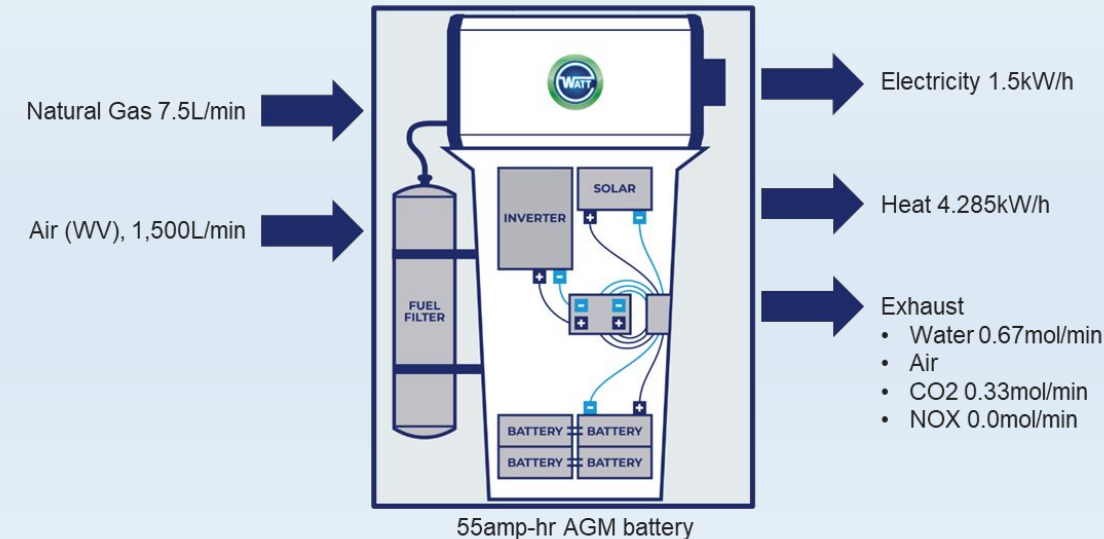
Electrical output 1.5 kWh equal to an average residential baseload electrical needs

- Efficiency ~ 40%
- 33% Emission Reduction, no NOX or SOX
- Quiet operations - 45 dB at 3 feet
- Back Power when electric grid is down
- Fuel options – natural gas, propane and butane
- Compatible with hydrogen and biofuels
- Integrate solar panels and batteries for increased electric output up to grid independence

Over five years of testing in residential homes



	%H <sub>2</sub> (Injected in NG pipelines)	Avoided CO <sub>2</sub> Emissions (Weighted Average)
<b>Today</b>	<b>0%</b>	<b>33%</b>
Tomorrow	20%	48%
<i>Infrastructure Changes Required</i>		
The Future	40%	62%
	60%	76%
	80%	91%



# HOPE UTILITIES

## Fuel Cell Program

Hope Gas is participating member of the **ARCH2 Hydrogen Hub**

Hope Gas will install **5000 fuel cells** in residential homes throughout Hope Gas 35 county West Virginia service territory

Forty percent (40%) of the fuel cells will be installed in disadvantaged communities. A subset will also be installed in low-income homes

Hope Gas will offer fuel cells at no upfront costs to customers in exchange for a 10-year energy services agreement.

Hope Gas will provide the following services:

- Equipment – Fuel Cell, Batteries, Inverter and Gas Treatment
- Installation – Utility and Electrical Panel Connections
- Service – All required service
- Maintenance – All required maintenance
- Monitoring – When connected to ethernet
- Restack – One restack during 10-year lifecycle
- Removal – After 10 years or customer requested removal

Planned fuel cell deployment in 2026

See a fuel cell at Hope Gas corporate headquarters in Morgantown

