

Partners in Sustainability: A Technology Provider's Contributions to Help Realize the UN SDG's



Aspects to Highlight

- The Functional, Technical, Environmental, Practical
- Community: Business and Social Aspects
- Educational
- Public Private Partnerships (P3)

First, a Salute to “home town Yonkers”!





- Mount Vernon NY based company, established in 2013 to introduce new small wind turbine technology for the US markets
- Aris is an affiliated company of DGC Capital Contracting Corp (www.dgccapital.com), a mature construction firm with 30+ yr history
- Aris Wind has expanding list of “Remote Power Unit” (RPU) off-grid wind/solar LED light units in NYC, NJ, CT, Chicago, and the Caribbean
- Aris Energy’s product line includes Combined Heat and Power (mCHP) fuel cells

Aris Wind’s Remote Power Unit, RPU for Zero Carbon Off-Grid Lighting/Auxiliary Power

Aris Energy’s mCHP 1.5kW Fuel Cell, for Low Carbon (~1/2) grid tied power for homes and businesses



The Remote Power Unit (RPU)



- What it is
- What it does
- How it helps realize the UN SDG's

RPU – What It Is

UL Listed Design



Key Features:

Patented Enhancement Unit

80W LED Lamp

Lamp Arm

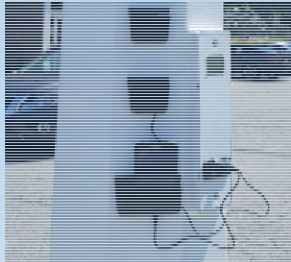
Semi-Transparent Tail Fin and Shroud

300W Generator 3 Blades System

Slewing Bearing

400W solar panel standard

Optional USB Ports



- Wind/solar powered, off-grid LED light with opportunity to power additional auxiliary power loads
- 300w wind turbine + ~400w solar power 80-100w LEDs via 24v/230amp-hr batteries
- Patented transparent “shroud” enhancement feature increases wind power output, catches low velocity wind with a shorter pole than traditional turbine

RPU Project Gallery

Chicago, IIT Microgrid Campus



Kings County Hospital, Brooklyn NY



Dobbs Ferry HS, NY



Jacobi Medical (Bronx, NY)

RPU Project Gallery



Eastchester HS, NY



*JFK Elementary,
Brewster, NY*



Nanuet HS, NY



*Woodcliff Lake
Schools, NJ*

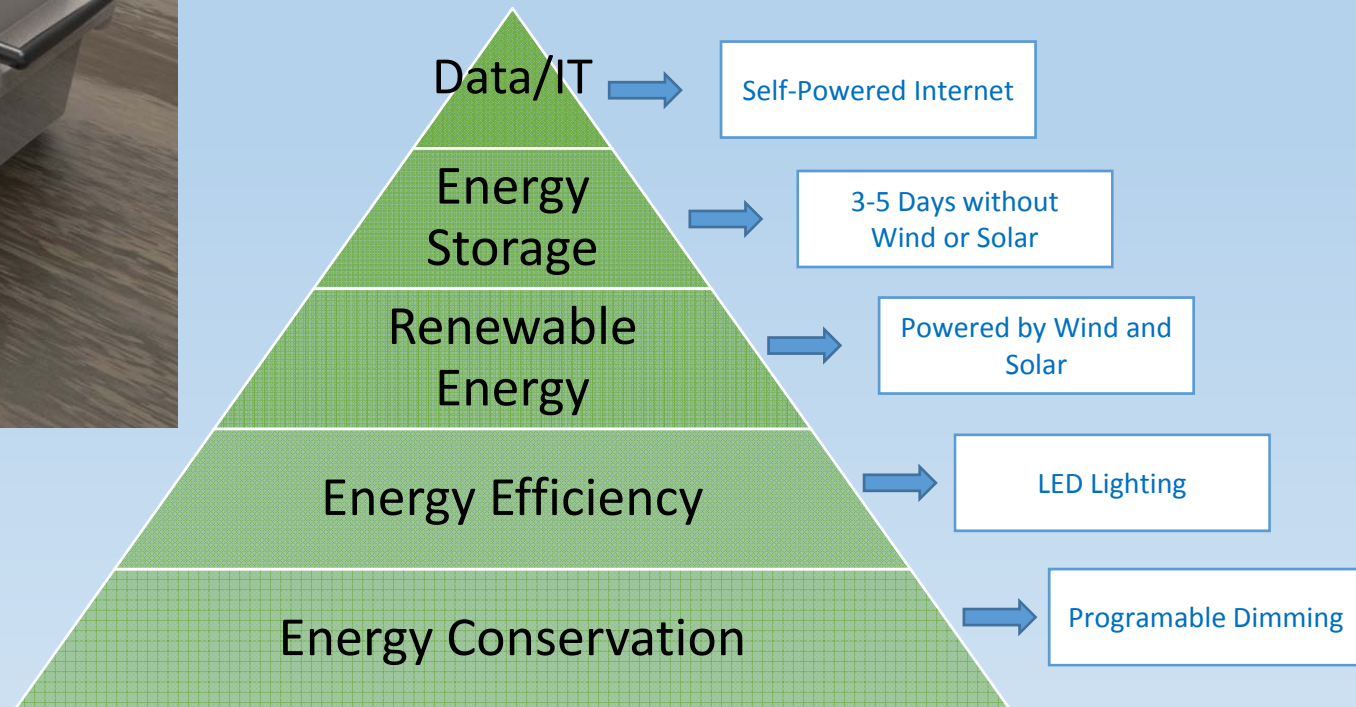
RPU – What It Does (Benefits)



- Enhanced Security with 100% Renewable and Resilient Power
- Each RPU Eliminates ~ 1 MW-hr/year / ~ ½ ton CO2/year
- Eliminates Trenching/Underground Wiring
- Turn Key Installation – “We make it easy”
- Highly Visible Green Branding via Banner/Tailfin
- **STEM**



Hybrid Charge Controller Manages the “RPU Energy Pyramid”



RPU – Branding and Advertising Opportunities

Customized branding for your organization with banner and tailfin logo



P3 – Public Private Partnership



Technology Solutions, Corporate Sponsors, Major Cities, and Society...A Working Example of Public Private Partnership And the SDG Connection!



Aris RPU
Energy
Technology
Solution



TD Bank
Corporate
Sponsor*



Major Cities and
Society
Realize Benefits and
their SDG Goals

* Part of TD Bank's "Ready Commitment/Vibrant Plant" Initiative

RPU: Relevant to 9 UN SDG's

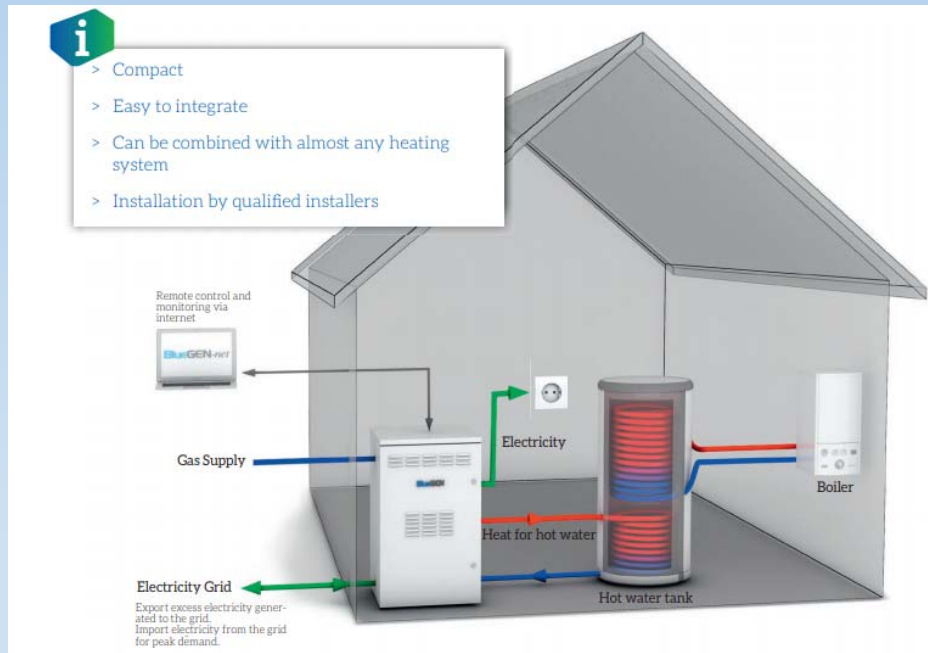


Sustainable Development Goals



The mCHP Fuel Cell

- What it is
- What it does
- How it helps realize the UN SDG's

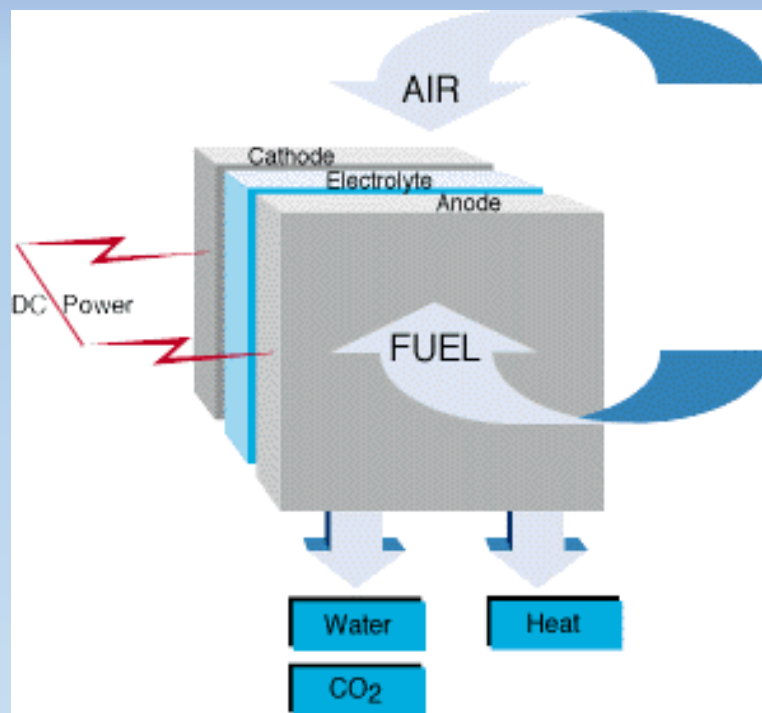


SOLIDpower “BlueGen BG-0” shown in residential application



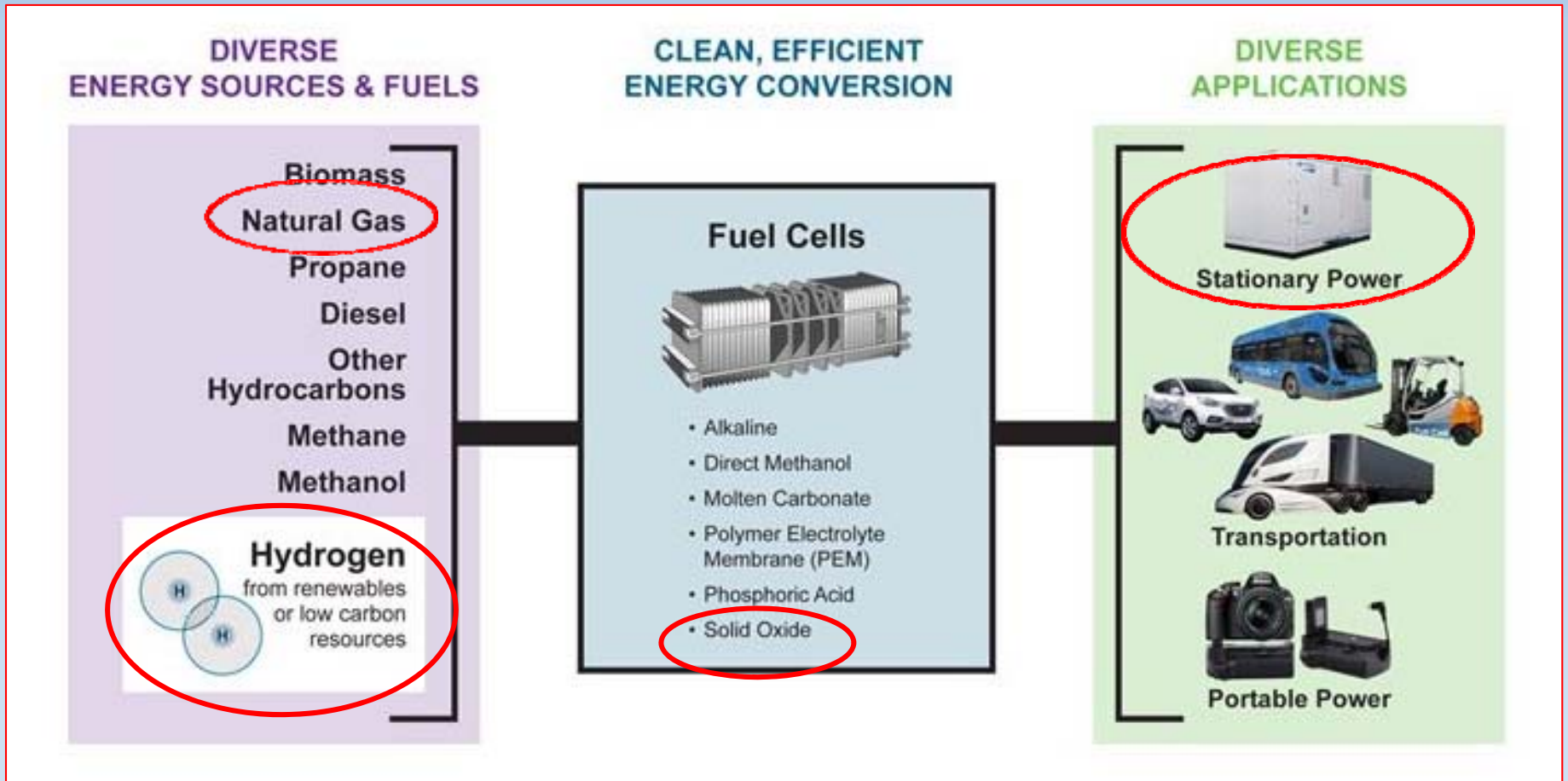
SOLIDpower BlueGen BG-15 model, for better scalability, cost reduction curve, aesthetics

The Fuel Cell – What It Is



- Like a battery (with anode/cathode/electrolyte), but *produces* energy instead of *storing* it
- Energy from electrochemical reaction of hydrogen and air to make DC power and heat
- Multiple cells combine to build voltage
- Many types/sizes/applications of fuel cells

The Fuel Cell – What It Does



mCHP Fuel Cell – What It Does (Benefits)



Fuel cell stack



Fuel cell in home



Fuel cells in Microsoft
“datacenter of the future”

- 1.5kW Fuel Cell Stack/System shown above converts natural gas and/or hydrogen to electricity at ~2x efficiency vs conventional central power and some byproduct heat.
- “The Carbon Cutter” – reduces CO₂/kw-hr emissions by ~50% TODAY
- Reduces utility congestion, customer demand charges and overall energy costs
- Resilient to power interruptions (storms, CA wild fires), reduces need for storage
- A practical solution today for homes, businesses and EV charging
- Building block for the Hydrogen Economy tomorrow

mCHP Fuel Cell: Relevant to 8 UN SDG's



Sustainable Development Goals

