BEST START

Partner Company Profile

An estimated 759 million people worldwide still lack access to reliable electricity, forcing many to rely on diesel generators as a stopgap solution. These generators are not only costly to operate but also emit harmful emissions, create noise pollution, and rely on vulnerable fuel supply lines. In forward operating bases, disaster zones, and off-grid regions, these limitations jeopardize mission success, safety, and environmental sustainability. BWR Innovations is transforming this paradigm with its advanced modular fuel cell systems, delivering clean, silent, and resilient power to replace outdated generators and pave the way for a more secure energy future.

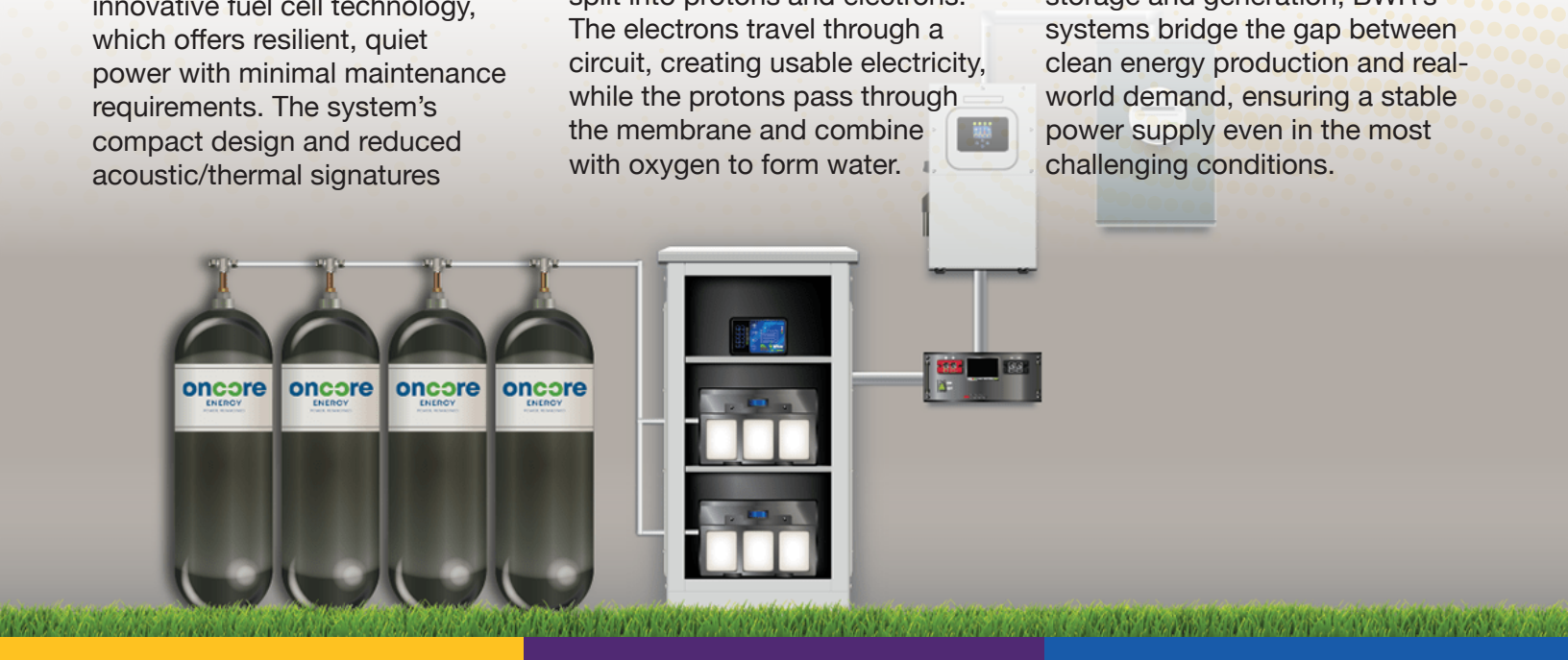
Advancing Fuel Cell Technology

Traditional diesel and gasoline generators have long been the default power solution for military operations, but they come with critical drawbacks: excessive noise, high thermal signatures, frequent maintenance requirements, and reliance on vulnerable fuel supply chains. BWR Innovations addresses these issues through its innovative fuel cell technology, which offers resilient, quiet power with minimal maintenance requirements. The system's compact design and reduced acoustic/thermal signatures provide tactical advantages in the field.

BWR's Proton Exchange Membrane fuel cells generate electricity through an electrochemical process using hydrogen and oxygen, producing only water vapor as a byproduct. Inside the fuel cell, hydrogen molecules are split into protons and electrons. The electrons travel through a circuit, creating usable electricity, while the protons pass through the membrane and combine with oxygen to form water.

This process delivers a zero-emission, high-efficiency energy source that is both reliable and environmentally friendly.

What also sets BWR's technology apart is its seamless integration with other energy sources, solving the intermittency problem often associated with clean energy. By providing on-demand power storage and generation, BWR's systems bridge the gap between clean energy production and real-world demand, ensuring a stable power supply even in the most challenging conditions.



Advantages to military operations

BWR's fuel cell technology offers significant military advantages through its silent operation and minimal thermal signature, which help conceal unit positions from enemy detection. With no moving parts, the fuel cells require minimal maintenance compared to traditional generators, achieving extended operational lifespans. The technology also maintains reliable performance in extreme temperatures from, ensuring power availability in harsh environments where conventional generators might fail. The modular nature of BWR's solution allows flexible deployment across various military applications.

Environmental and Economic Impact

Traditional diesel generators contribute to 1 billion metric tons of CO_2 emissions annually, according to the International Energy Agency (IEA). BWR's fuel cell technology offers a transformative alternative, eliminating harmful emissions and supporting global carbon neutrality goals. To date, BWR's systems have already prevented thousands of pounds of CO_2 emissions by replacing diesel generators and reducing reliance on fossil fuels.

BWR's technology has been successfully implemented in a variety of settings, demonstrating its versatility and reliability. A notable example is BWR's contribution to the SoCalGas Hydrogen Home of the Future Project, which showcased how solar energy can be stored as hydrogen and converted back into electricity using BWR's fuel cell system. This project highlighted the potential for 24/7 clean energy solutions in residential, commercial, and industrial applications.

Looking ahead, BWR is actively collaborating with the Air Force Research Lab to advance hydrogen energy research, further expanding the technology's military and commercial potential. With a commitment to innovation and sustainability, BWR is poised to play a pivotal role in the global transition to clean energy.

About BWR Innovations

BWR Innovations is led by a team of seasoned experts with decades of experience in energy technology, research, and development. Founder and CEO Dr. Joel Jorgenson brings a wealth of knowledge in energy management, while the broader team is dedicated to pushing the boundaries of what's possible in modular energy systems. BWR's long-term goal is to revolutionize energy solutions across industries, ensuring a cleaner, more resilient power future for all.

BWR Innovations | https://bwr-innovations.com
information@bwr-innovations.com | (701) 205-3103

About BEST START

BEST START provides the crucial support businesses need to bring their visionary technologies to life. Whether refining smart grid technologies, enhancing green energy applications, or creating efficient solutions for power generation, BEST START partners with Minnesota companies to move technology forward. BEST START is a collaboration of three organizations—DEVCOM Army Research Laboratory, the University of St. Thomas in Minnesota, and ETC, a nonprofit defense solutions provider.