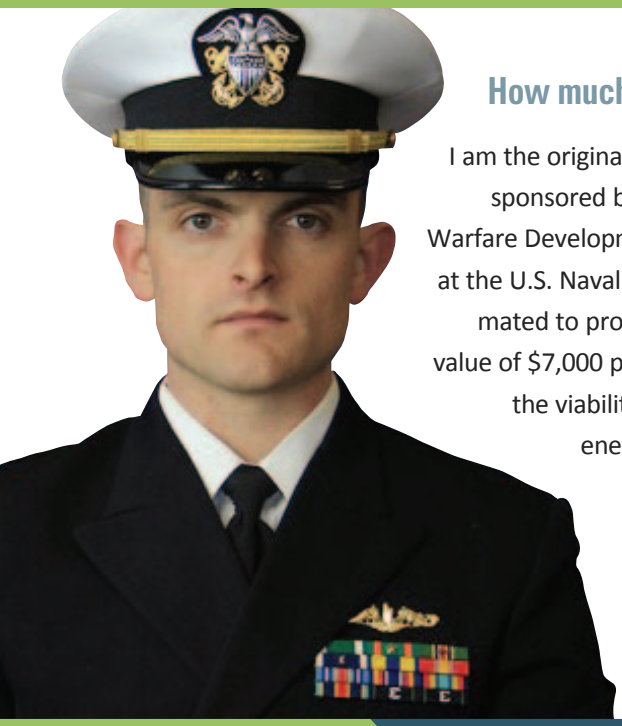
DID YOU KNOW?



How much energy could my idea save the Navy once it's implemented?

I am the originator and project manager for Waste to Watts—a renewable energy project sponsored by the Chief of Naval Operations Rapid Innovation Cell (CRIC) and the Navy Warfare Development Command—which endeavors to produce electricity from food waste at the U.S. Naval Academy. If successfully implemented, the Waste to Watts project is estimated to produce 60 megawatts of electricity per month, with an associated economic value of $7,000 per month. I hope that the Waste to Watts project serves as an example of the viability of waste-to-energy technologies to help the Navy achieve its renewable energy mandates through more widespread implementation across the Navy.

Name: Lieutenant Eric Regnier

Hometown: Rochester, Minnesota

Job: Action Officer, CRIC Project Lead

Command: Navy Warfare Development Command

Do you think an energy conservation culture change is important for our Navy?

In the coming decades the increasing strategic value of our energy resources will become a significant factor in the operational readiness and capabilities of the Fleet. Creating a culture of energy conservation in the force today will help to maximize our readiness tomorrow as we move into an increasingly resource-constrained environment.

ENERGY SECURITY ENHANCES COMBAT CAPABILITY

Did you know that the Waste to Watts project seeks to provide a renewable energy resource for naval facilities by producing electricity from food waste?

Why is it important for our Navy to be energy efficient?

The Navy depends on energy to enable all aspects of our training, missions and operations. Any uncertainty or insecurity in the logistics chain that provides our energy resources introduces a direct threat to the combat readiness and effectiveness of our ships, aircraft and personnel. As energy resources become more scarce and costly, the amount of time warfighters spend at sea training to execute their mission will also diminish. Energy security should be of equal concern to that of a missile vulnerability or cyber threat.

Why Waste to Watts?

I am passionate about innovation and energy security. The Navy needs to adopt more progressive and widespread uses of renewable and sustainable energy sources. That's what makes me passionate about the Waste to Watts project. It's an opportunity for a naval facility to reclaim a lost resource—food waste.

I hope that this project will make a significant contribution to the Naval Academy's energy conservation efforts and inspire others to make the Navy a more sustainable and capable fighting force.

How does Waste to Watts work?

The Waste to Watts project seeks to provide a renewable energy resource for naval facilities by producing electricity from food waste. During the naturally occurring process of anaerobic digestion, bacteria produce methane (a biogas) from food waste. We can then use that biogas to fuel a generator to produce electricity for a facility. Our goal is to deploy an anaerobic digester at the Naval Academy that uses food waste from the midshipmen's mess hall as feedstock for this reaction.

Why did you decide to build a prototype at the Naval Academy?

I decided to test the Waste to Watts prototype at the Naval Academy because of the quantity of food waste generated by the Academy's midshipmen, the academic mission of the institution, and the opportunity to engage midshipmen in the project. While the Academy's galley (King Hall) operates efficiently, if each of the Academy's 4,000 midshipman produces just three ounces of food waste per meal, the amount of total waste accumulates very rapidly. So the quantity of food available for anaerobic digestion makes the Academy an ideal location to test the Waste to Watts model.

In addition, there is significant intellectual capital at the Academy that we can leverage by involving midshipmen in the project through senior design projects, class lectures and site visits. So we are collaborating with Associate Professor Patrick Caton from the Academy's Mechanical Engineering Department to fully explore these options.

Reaching out to the younger generation is really important. Every Sailor who reports to their first command identifies some issue where they know they can have an impact. But it's a matter of feeling empowered to make a difference. Ultimately, that's the objective of Waste to Watts—to not only provide a renewable energy resource for the Naval Academy and other naval facilities but also serve as a mechanism to empower junior Sailors. We want to help them implement their own ideas through exposure to the CRIC—the organization that afforded me the opportunity to explore the Waste to Watts project.

U.S. DEPARTMENT OF THE NAVY ENERGY SECURITY

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