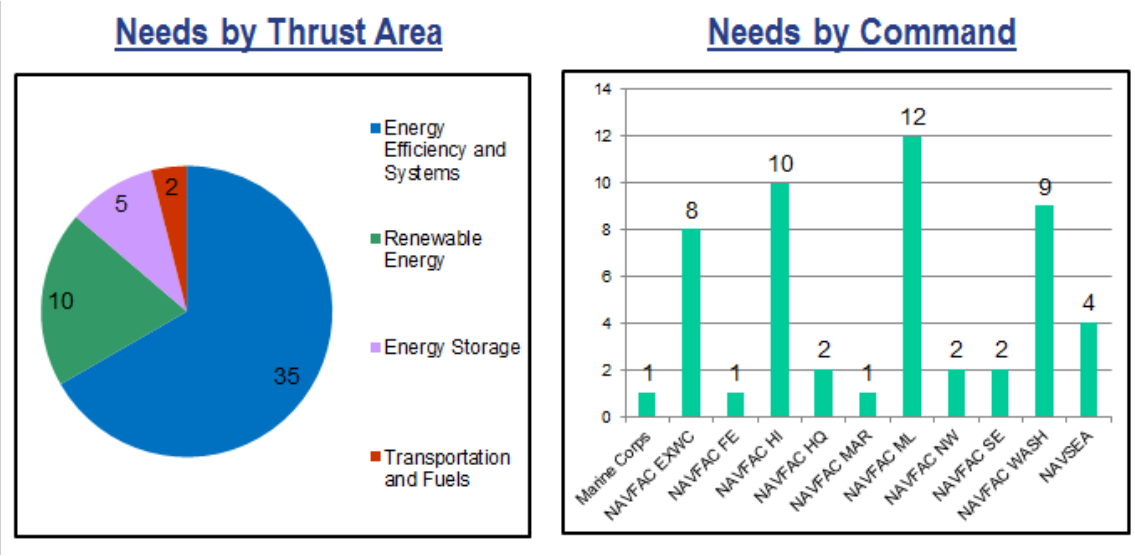
NSETTI FY16 Needs Process

Top Navy Shore Energy Needs (for FY16 RDT&E investment)

The NSETTI program solicits Shore Energy needs from across the Navy's Shore Energy community. These needs become an essential part of addressing shore energy technology challenges and are used to prioritize technology investments. The first formal NSETTI needs solicitation exceeded our expectations resulting in 52 needs! The needs represent requirements across all our thrust areas from a broad range of geographic regions and organizational echelons.



Once the Needs were collected, it was up to NSETTI's Working Group (NWG), the Review Group (NRG) and the Approval Group (NAG) to carefully review each Need. This detailed process separated the Needs into various categories, only one of which is able to compete for funding. By the time the NAG finished their final review, it was apparent that there were 5 broad areas that required immediate attention. Within those areas there were 12 submitted Needs. These are summarized in the table below. The remaining 40 Needs either had other on-going research that might lead to a solution, or COTS technology could be utilized, the state of technology was too immature to solve the Need at this time, or alternate funding sources were available.

No.	Combined Title	Combined Description	Priority
1	Utilize Energy Storage to Enable Renewable Generation	There is a need for cost effective energy storage to enable renewable energy generation. Many bases have met their renewable threshold and cannot add more renewable energy without energy storage.	High
2	Energy Security through Battery Reuse	The Navy recycles batteries that no longer meet first use criteria but still have additional capacity such as “fleet return” submarine batteries. There is a need to demonstrate and evaluate the ability to reuse these batteries as energy storage for UPS, enabling islanding capability during a power outage, integrating with renewable systems, demand response or other grid stability issues. The demonstration should include a study on the applicability throughout the Navy with different types of used batteries.	High
3	Reliable and Resilient Power Enabled by a Microgrid, Renewable Energy and Energy Storage	Naval Installations need a reliable and resilient power supply with the ability to operate while the main grid is down. In addition, the Navy needs a way to integrate renewable energy resources and energy storage smoothly into the grid. There are several installations that are at the renewable threshold limit and cannot support any additional renewable power without energy storage and Microgrid controls systems. The Navy is involved in Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS). Any projects proposed should build on the work that SPIDERS has already done.	High
4	More Energy Efficient HVAC systems	The Navy needs more efficient technologies to cool and heat its buildings. In addition, there is a need to provide technology transfer and publicity for energy efficient and effective HVAC technologies that have been successfully demonstrated on Naval installations.	Medium
5	Lighting	The Navy needs a way to maximize energy savings of lighting while maintaining lighting quality. Areas of interest: wireless controls, innovative lighting controls while meeting cyber security requirements.	Low

Many of our needs focused on the problems created by the high penetration of renewable energy and the need to maintain grid stability using energy storage and smart, autonomous controls. Controlling and managing these systems remotely, autonomously or both creates a cyber-security and information technology (IT) vulnerability that we plan to address in shore energy RDTE projects in the future.

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