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ESTEP

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ENERGY SYSTEMS TECHNOLOGY EVALUATION PROGRAM (ESTEP)

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Introduction and NPS Role

The Naval Postgraduate School (NPS) is a key member of the Energy System Technology Evaluation Program (ESTEP) Program funded by the Office of Naval Research (ONR). ESTEP provides for energy related projects for students and faculty in both the Science and Technology (Mechanical and Electrical Engineering) and the Policy and Analysis (Operations Research and Business-Energy) areas that support the NPS energy curricula and tracks initiated by the Secretary of the Navy.

The NPS leaders for these activities are:

- Prof. Dan Nussbaum (OR), Return on Investment and Policy and Analysis
- Prof. Knox Millsaps (MAE), Science and Technology

Technology Advancement

The Energy System Technology Evaluation Program (ESTEP) will conduct real-world advanced technology demonstrations to evaluate emerging energy technologies using Navy and Marine Corps facilities as test beds. Data collected and analyzed in this program will be used to evaluate performance and reliability of energy technologies under various environmental and operating conditions and to provide the baseline data required for inclusion into energy efficiency systems and equipment procurement specifications. The technology focus will be on innovative pre-commercial and nascent commercial energy technologies obtained from open market sourcing, including companies from within the venture capital and small business communities.

Education and Training for DoN Workforce

During the course of implementing technology demonstrations at naval installations and in the private sector, often the greatest hurdles are not necessarily the technology challenges, but are instead fiscal constraints, policies, regulatory requirements and restrictions, permitting, and other institutional and bureaucrat hindrances that often delay and prevent projects implementation. Therefore, a thorough knowledge of the complex project process—financial, institutional, bureaucratic and technical, by project managers will facilitate implementation and provide well-trained energy managers able to continually improve the processes in the future. The knowledge sets described above can be taught at some level in a classroom; however, true understanding of project complexity can only be fully recognized and effectively handled through real-world experience. The ESTEP projects offer exactly this real-world training and education for civilians, military personnel and veterans wishing to enter an energy career path, including those enrolled in technical and business energy-track curricula at NPS.

With regard to veteran opportunities, ONR and the current ESTEP naval partner organizations (SPAWAR, NAVFAC and NPS) are establishing linkages to veteran and wounded warrior programs and outreach efforts. In the early ESTEP implementation, a pilot veteran outreach effort is being developed for the San Diego region, with special focus in linking to veteran programs already established at San Diego State University, including the Success in Engineering for Recent Veterans through Internship and Career Experience (SERVICE) Program.

Program Implementation Structure

NPS, NAVFAC, and SPAWAR play key roles, respectively, in DoN education (NPS); installation construction and O&M (NAVFAC); and information networks and security (SPAWAR). Therefore, the ESTEP implementation plan incorporates each of these naval organizations into program implementation roles based on their expertise, and overall program execution will be performed under a team structure. For the program, funding and general oversight will be provided by ONR. The figure below captures the roles of each participant, the team structure, veteran participation and other features of ESTEP.

