

Nominator Contact Information**First Name:** Chris**Last Name:** Tindal**Company Name:** The Department of the Navy**Address Line:** Navy Energy Policy Office, 1000 Navy Pentagon**City:** Washington, D.C.**State:** District of Columbia**Zip Code:** 20350-1000**Phone:** (703) 602-4408**Email:** chris.tindal@navy.mil**Nomination Fee:** \$100**Nomination Information****Nominee First Name:** Valerie**Nominee Last Name:** Chun

Partial list of additional team members:

Lt. Josh Perry, Naval Facilities Engineering Command Far East (NAVFAC FE)

Yuuichi Fukawa, NAVFAC FE

Randy Duncan, NAVFAC Engineering Service Center (NAVFAC ESC)

Debbie Kephart, Specialty Center Acquisitions NAVFAC (SCAN)

Nominee Company: The U.S. Navy Yokosuka Cogeneration Project Team: Commander Fleet Activities, Yokosuka, Japan (CFAY), Naval Facilities Engineering Command Far East (NAVFAC FE), NAVFAC Engineering Service Center (NAVFAC ESC) and Specialty Center Acquisitions NAVFAC (SCAN)**Nominee Address:** Naval Facilities Far East
PSC 473, Box 13
FPO, AP 96349-0013**Nominee City:** Yokosuka**Nominee State:****Nominee Country:** Japan**Nominee Postal Code:** 96349-0013**Nominee Phone:** 81-616-043-9510**Nominee Email:** Valerie.Chun@navfacfe.navy.mil**May we contact the nominee about your nomination:** Yes**Nomination Category:** I-Star Award for Energy Efficiency**Please indicate your realized or potential energy savings (in engineering units) over a stated period of time, if applicable:** saving 582 billion British thermal units (Gbtu) and 8 million gallons of liquid fuel annually.**Please indicate your annual energy savings (in engineering units), if applicable:** Project began in November 2008; saving 582 GBtu and 8 million gallons of liquid fuel annually.

Alliance To Save Energy

"I-Star" Award for Energy Efficiency one-page nomination follows.

The Challenge: The Department of the Navy faced a challenge at Commander Fleet Activities, Yokosuka, Japan (CFAY). Its Fleet and shore energy requirements were growing, and it needed additional, reliable power. At the same time, it needed to meet federal goals for reduction of energy consumption.

The Solution: To meet this challenge, the Navy installed at CFAY a 39 megawatt cogeneration power plant. Cogeneration, also known as combined heat and power, is an efficient method of preventing heat waste. Rather than venting the heat generated by the production of electricity, the heat is typically diverted for such uses as heating, cooling and dehumidification. This process displaces fossil fuel combustion with otherwise lost heat and, because the electricity is generated near the point of use, there is less transmission loss than electricity provided by nearby power plants. Overall, the cogeneration process is more than twice as efficient as the average U.S. fossil fuel power plant.

Project Execution: Building the plant presented several engineering challenges. The foundation required 30-foot pilings that could support a three-story power plant facility housing three gas turbine generators and three reciprocating engine generators. A SCADA system was needed to control the plant and interface with the local electrical grid to accommodate megawatt-size power swings without interruption. The former steam generation and distribution systems needed major upgrades, and a new gas line to the base had to be installed. The CFAY plant offers power equal to the load of 26,000 homes. The plant is guaranteed to deliver reliable electrical power to meet the Navy's utility demands. In addition it provides emergency power and a new gas service on the base. The plant is fully metered for power generation, gas consumption and ambient temperature so that a very accurate calculation of energy use and cost avoidance can be performed in real time.

Replication/Leadership: This project was financed through an Energy Savings Performance Contract (ESPC), which is structured so that the project's energy efficiency savings will pay for the plant and all related costs, including loan financing and implementation and service phases, over the contract's 20-year term. The Yokosuka cogeneration plant, at \$105 million, is the federal government's largest ESPC. The project is a model for energy efficiency, energy independence, and energy security that can be replicated.

Environmental Benefits: This clean energy plant will dramatically reduce harmful emissions and greenhouse gases. Carbon dioxide output will drop 22 percent, a reduction of nearly 62 thousand tons per year. Sulfur dioxide output will decrease by 80 percent and nitrogen oxide by 47 percent. (In other words, it reduces carbon dioxide by 62 ton/year, sulfur dioxide by 871 ton/year, nitrogen oxide by 234 ton/year and particulate matter by 93 ton/year.)

Projected Savings: The plant is guaranteed to save 582 billion British thermal units (Btus) per year. As part of this project, CFAY also decommissioned an existing steam plant, which will save more than eight million gallons of liquid fuel per year. In terms of costs, the project is guaranteed to avoid \$358 million over the next 20 years. **Initial Results:** In December 2008, the plant's first month of operation, the plant avoided more than anticipated while providing uninterrupted power to the pier and to the base. These energy savings both save money, to repay the contractor's investment, and enable the Navy to make progress toward the required energy reduction goals.

The Department of Navy has relied on a comprehensive energy program, with centralized resources and program management operating in partnership with regional and installation level resources and implementation.

