

**STATEMENT OF OBJECTIVES**  
**Fort Hood Measurement & Verification, Net Zero, and Energy Conservation Study**  
**FORT HOOD, TX 76544**

Competed on Desert Southwest, Great Plains, & Gulf Coast CESU Regions

**1.0 PURPOSE**

1.1 The Fort Hood environmental program ensures military mission activities are conducted in compliance with all applicable environmental laws, regulations, and policies. Article I B of the master agreement states the objectives of the CESU are to: provide research, technical assistance and education to federal land management, environmental and research agencies and their potential partners; develop a program of research, technical assistance and education that involves the biological, physical, social sciences needed to address resource issues and interdisciplinary problem-solving at multiple scales and in an ecosystem context at the local, regional, and national level; and place special emphasis on the working collaboration among federal agencies and universities and their related partner institutions. The purpose of this effort is to provide information necessary to properly coordinate and integrate all energy program updates, including saving reports for domain objects (DO) DO1, DO2, DO3; data validation; and validation model update.

1.2 This work requires an onsite support personnel located at Fort Hood, TX. The work involves: executing Measurement and Verification (M&V) for Energy Savings Performance and providing other energy requirements as described herein to support Net Zero goals. For this effort, the services rendered include data collection and reporting activities, creation of data base for Utility Management and Control System, M&V plan for solar thermal, and providing access to all created data bases. This effort will provide data necessary to validate Johnson Controls energy savings to maximize energy management within Fort Hood. This effort requires close coordination with the Fort Worth Districts CESU PM and the Fort Hood Project Manager and other regional stake holders.

**2.0 AUTHORITY**

2.1 In agreement with the above stated goals, the recipient/cooperator agrees to provide the necessary personnel, equipment, and materials required to implement, in part, the Fort Hood responsibilities pursuant to the Sikes Act in order to support INRMP elements. The completed activities under this effort must be completed in a manner that is conducive to the mandates and guidelines associated with the Environmental Policy Act, Clean Air Act, Clean Water Act, Energy Independence Security Act, Energy Policy Act of 2005, Renewable Energy Credits Policy, DOD Net Zero Initiative, and Army Regulation 200-1.

2.2 In accordance with section 6305 – *Using cooperative agreements of the Federal Grant and Cooperative Agreements Act of 1977* (31 U.S.C. § 6301 et seq.), all CESU

projects must carry out a public purpose of support or stimulation, instead of acquiring goods or services for the exclusive direct benefit of the United States Government. Examples of carrying out a public purpose may include, but are not limited to, the following:

- Project results are made available to a wide audience (including nonfederal entities)
- Project results/outputs add to the scientific literature/knowledge base, with applicability and utility beyond the scope of the project footprint/study area
- Academic and other nonfederal partner institutions (and their personnel) gain professional experience, increase knowledge, and develop skills and abilities
- Students benefit from direct interaction with federal scientists, program and technical staff, and field unit managers

2.3 In accordance with section 6305 – *Using cooperative agreements* of the *Federal Grant and Cooperative Agreements Act of 1977* (31 U.S.C. § 6301 et seq.), substantial involvement is expected between the Department of Defense and the recipient when carrying out the activity contemplated by the cooperative agreement. The DoD agrees to participate at a national level in support of the CESU program as accepted in the Master MOU for the establishment and continuation of the CESU program Article II 1-4 and Article VI 1-7.

The installation further (hence DoD) agrees to provide substantial involvement as directed under Article II (A) Gulf Coast CESU Master Agreement include, but are not limited to, the following:

- Fort Hood is involved in development of study methodology, data gathering, analysis, and/or report writing
- Fort Hood actively participates and collaborates in carrying out the project plan of work, reviews and approves activities, helps train, or select project staff or trainees
- Fort Hood incurs in-kind or direct expenditures in carrying out the activities specified in the project agreement. Examples include, but are not limited to, the following:
  - Providing computing services
  - Providing staff time to work on the project

### 3.0 DESCRIPTION OF OBJECTIVES

The following entails the update energy savings and validation report for Domain Objects (DO) (DO#1, DO#2, and DO#3) and summary comparison for assumed savings monitored by Johnson Controls, data collection, reporting, attend meetings, Utility Monitoring Control System (UMCS) database creation and access, M&V plan for solar thermal. The information necessary for completion of the Fort Hood Energy Plan resides with existing energy layout plans and phasing of assembled database's that will be provided by Fort Hood. The Cooperator will also investigate Fort Hood Energy Savings

Plan Component (**ESPC**) and determine the reason(s) for the large deviations in energy savings between forecast and documented results.

### 3.1 **Task 1:** Update the energy savings for DO#1

The recipient will provide an updated energy savings and validation report for DO1 and provide a summary comparison for assumed savings by monitored Johnson Controls Systems. This updated energy savings and validation report will be a continuation of data reviewed, assembled, and input, modeled, and validated by Texas Engineering Experiment Station (TEES) in previous years.

DO1 consists of approximately 18 sites. The installation will provide the new database sets (retrieved from UMCS, NWS and/or any other methods) to be reviewed, assembled, and input, modeled, and validated by the contractor. Database provided will be multiyear of monitoring data from 2016 through current year.

This will be accomplished by requesting information from point(s) of contact to extract this information.

Deliverables include an Updated Energy Savings and Validation Summary Report for DO1.

### 3.2 **Task 2:** Update the energy savings for DO#2

The cooperator will provide an updated energy savings and validation report for DO2 and provide a summary comparison for assumed savings by monitored Johnson Controls Systems. This updated energy savings and validation report will use new data collected to add to existing data, assembled and input, modeled, and validated by Texas Engineering Experiment Station (TEES) in previous years.

DO2 consists of approximately 12 sites. The installation will provide the District with new database sets (retrieved from UMCS, NWS and/or any other methods) to be reviewed, assembled, and input, modeled, and validated by the contractor. Database provided will be multiyear of monitoring data from 2016 through current. The amount of effort is directly dependent upon the availability of the required information. Appropriate requests will be made to the correct point(s) of contact to extract this information.

Deliverables include a Draft Updated Energy Savings and Validation Summary Report for DO2 and an updated validation model for DO2.

### 3.3 **Task 3:** Update the energy savings for DO#3

The cooperator will calculate baseline models and savings from DO3 with available data and provide summary comparison for assumed savings by monitoring Johnson Controls Systems. This new energy savings and validation report will be consistent with procedures followed for the DOI and D)2 data reviewed, assembled, modeled, and validated by Texas Engineering Experiment Station (TEES) in previous years. DO3 consists of approximately 28 sites. The installation will provide the new database sets

(retrieved from UMCS, ACR Loggers, NWS and/or any other methods) to be reviewed, assembled, input, and modeled, and validated by the recipient. Database provided will be multiyear of monitoring data from 2016 through current.

The amount of effort is directly dependent upon the availability of the required information. Appropriate requests will be made to the correct point(s) of contact to extract this information.

Deliverables include Draft Energy Savings and Validation Summary Report for DO3 and a new validation model for DO3.

**3.4 Task 4: Maintain Procedures to allow Fort Hood Database Access**  
Cooperator will coordinate as necessary to ensure Fort Hood access to Engineering Station's Lab database through password-protected processes.

**3.5 Task 5: Multiyear Base Wide Analysis**  
Cooperator will track data and analyze the base-wide energy consumption using data provided by Fort Hood.

Deliverable will be base-wide energy use analysis report.

**3.6 Task 6: Measurement and Verification for Solar PV Electric Generation System**  
Cooperator will develop and apply an M&V plan for solar PV system installed at Fort Hood. After approval, the cooperator will apply M&V plan and analyze solar PV system to determine performance.

Deliverable will be M&V plan for solar PV system.

**3.7 Task 7: Retro-Commissioning Assessment**  
Cooperator will work with Fort hood to identify appropriate sites for retro-commissioning assessment. Retro-commissioning assessments on selected sites as requested.

Deliverable includes preliminary retro-commissioning assessments and retro-commissioning assessments for selected sites.

### **3.8 Administration**

Provide administrative services for the project to include monthly status reports, accounting, etc.

Deliverable includes general administrative support documentation such as monthly status reports throughout the duration of this project.

## **4.0 QUALIFICATIONS**

- 4.1 Engineering education and background. Must have current or previous experience with project where scopes included Measurement & Verification work including development of Energy Savings Reports, collection of data from ACR loggers and NWS, develop procedures to auto-retrieve and archive data from UMS, develop a M&V plan for solar thermal, and track and analyze the base-wide energy consumption using available data.
- 4.2 Security: maintain and safeguard all information provided in connection with this plan that is in any way considered sensitive and not available for general distribution. The Fort Worth USACE and the Cooperator shall receive written clearance from Fort Hood Army Base prior to release of any sensitive information.

## 5.0 GOVERNMENT FURNISHED MATERIALS OR PROPERTY

5.1 Physical Data: Physical Data: Fort Hood Army Base, to the extent possible, will provide the source documents necessary to accomplish the work. The District will be provided with the appropriate related documentation which will provide the data to the contractor. Reasonable access to installation will be provided to the District and contractor for the acquisition of required data.

Government furnished materials or property is governed by 2 C.F.R. Part 200.312 which states that a) Title to federally owned property remains vested in the Federal government. The non-Federal entity must submit annually an inventory listing of federally owned property in its custody to the Federal awarding agency. Upon completion of the Federal award or when the property is no longer needed, the non-Federal entity must return the property to the Federal awarding agency for further Federal agency utilization.

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## 6.0 PERIOD OF PERFORMANCE

7.1 Base Effort - The period of performance will be 24 months from the date of award for non-severable services. The data collection and analytical processes require up to 18 months and then final reporting activities will require 6 months.

## 7.0 COORDINATION

- USACE Fort Worth District POC  
Kathy Mitchell  
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- Fort Hood Energy Management Branch POC  
Edwin Frazier CEM,CEA,CMVP,CSDP  
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Fort Hood, TX 76544

## 8.0 DELIVERABLES

8.1 Draft Project Reports. One (1) electronic copy of each draft report should be submitted to the installation and USACE POCs, no later than one month before end of the project for each of the following tasks:

- Task 1: Draft Updated Energy Savings and Validation Summary Report for DO1
- Task 2: Draft Updated Energy Savings and Validation Summary Report for DO2 and an updated validation model for DO2
- Task 3: Draft Energy Savings and Validation Summary Report for DO3 and a new validation model for DO3
- Task 4: Updated data base and access to information
- Task 5: Draft Base-wide Energy Use Analysis Report
- Task 6: Draft M&V Plan for Solar Thermal
- Task 7: Preliminary retro-commissioning assessments for selected sites

8.2 Kick-off Meeting. Hold a One (1) day on-site kick-off meeting no later than 30 days after award of cooperative agreement.

**NOTE:** Per FY2021 Bona Fide Need requirements for cooperative agreements with authority of the Sikes Act, a teleconference or videoconference to discuss project objectives, coordination plans, etc. is required before 30 September 2021.

9.2 Progress Reports - One (1) typed letter report describing progress on the project. The report shall be due as of the last day of the third month (**quarterly**) and shall be transmitted via electronic mail, facsimile, or regular mail no later than the 10th calendar day following the end of the reporting period. Invoices for partial payment shall be submitted to coincide with receipt of the monthly progress reports. No partial payment will be approved unless the government has received all progress reports which are due.

9.3 Annual Inventory –Federally owned property - an annual inventory listing Federal property (to include description of the property, a serial number or other identification number) that is in the custody of the recipient; Copies to be sent to USACE – SWF and the INSTALLATION.

9.4 Annual Inventory – Required under 2CFR for Grants and Cooperative Agreements - Acquired Property purchased with funding from award - property records must be maintained that includes description of the property, serial number or other identification number, source of funding, who holds title, acquisition date, cost of property, percentage of Federal participation in project costs, location, use and condition of property, and

ultimate disposition including date of disposal and sale price. A physical inventory must be taken, and results reconciled every two years. Copies of the inventory to be sent annually to USACE – SWF and the INSTALLATION.

9.5 Annual Report per 2CFR. One (1) paper copy of an annual report should be submitted no later than one month before end of each year. At a minimum, the report shall contain an introduction section, and one section for each Task identified in your proposal. For each Task, the report shall summarize work accomplished for the Task. INSTALLATION POC staff will review and provide comments, if any, within fifteen (15) calendar days after receipt.

- 10.0 This cooperative agreement may be administered through a CESU only upon mutual agreement and official authorization by both parties of the acceptance of the application of the CESU Network IDC rate (17.5%).

Any resulting cooperative agreement will be subject to and recipient/cooperator shall comply with 2 CFR 200.313 “Equipment”, 200.314 “Supplies”, and 200.315 “Intangible Property” which includes use of research data.

[End of SOO]