

**TARDEC BAA W56HZV-05-R-BAA1, Topic #19: MICRO GRID
Summary Q&A - 06 June 2009**

Topic Par.	General Question / Comment	Answer
1a	Do the original topic requirements for a "mobile micro grid" still apply?	No. Revised topic #19, issued 08 May 2009, completely supercedes the previously advertised requirements. The micro grid will undergo a stationary application, though original transportation to Hawaii for test and demonstration is required. The micro grid emplacement will be out of doors, so ambient conditions must be accounted for. Original baselines for size and weight reductions do not apply, though they do serve as an indicator of existing Army capability. MIL-SPEC 810G requirements for durability do not apply. Wind power generation is not desired under the revised topic.
1a	Is the micro grid required to accept power input from the local grid?	Yes, and the local power grid input is desired to be bi-directional.
1b	Are plug-in and/or plug-in hybrid-electric charging ports to be bi-directional?	Yes.
2	Please clarify the micro grid acceptance of power "from various inputs."	As stated in the topic, at minimum the micro grid is required to accept power input from the local grid, solar sources, and the vehicles. Additional inputs may be proposed, such as alternative renewable sources (except Wind), genset(s), etc.
2	Please clarify the micro grid power output "to various applications."	Micro grid output is intended for vehicle charging, to serve local installation loads (i.e. lighting, computers, HVAC, etc.), for charging back-up storage (if proposed), and for any other purposes that may provide valuable test/demo data.
2	What is meant by "road worthy."	As otherwise indicated (par. 3b), the proposed vehicles are subject to the FMVSS standards and regulations. The vehicles will be used for transportation on public roadways, and must be suitable to be registered for this use. The contractor bears responsibility for upkeep and operability for the duration of the test/demo period.
3a	What is the preferred grid voltage?	480 VAC, three-phase is the best technical fit for our purposes.
3a	What are the intended sources for the 250kW of power input to the micro grid?	At minimum, 25kW input from solar is required (par. 3b). The remainder up to 250kW is expected to be drawn from the local grid, vehicles, and any other sources proposed.
3a	In requiring a "minimum of three input ports," there is no provision for vehicle power export.	The referenced output ports for vehicle charging are to be bi-directional, so distinct inputs for vehicle power export were not specified.
3a	Two input ports are required for renewable energy. If one port is for solar input, what is the power source for the second input port?	The second input port for renewable energy is regarded as a spare port to utilize additional renewable power sources as proposed, or as provided by TARDEC at a later date for test/demo purposes.
3a	Only three output ports are designated for vehicle charging of four vehicles. Is simultaneous charging required? If so, why only three output ports?	Simultaneous charging capability for all four vehicles is required. Of the minimum three bi-directional ports for vehicle charging, each may service multiple charging stations to provide this capability.
3a	Will solar assets be roof-mounted, permanent, or temporary?	Not currently clear whether solar emplacement at Fort Shafter is roof-mounting, permanent or temporary - though the solar equipment is required as a final deliverable to the Government on completion of the test/demo period. More specific information will be available prior to establishing a contract for the selected project.
3b	Please clarify the "light-duty plug-in electric...or plug-in hybrid electric" vehicle requirement.	Acceptable plug-in electric and/or plug-in hybrid electric vehicles include a range of vehicles from military to commercial (light pick-ups, sedans), though smaller Neighborhood Electric Vehicles are not desired. There is no "Buy American" restriction on the make/model for these vehicles. Vehicles may be a variety of makes/models. Four vehicles are required as deliverables to the Government upon completion of the test/demo period. A combination of purchase and leasing may be utilized to provide a mix of vehicles for the duration of test/demo, provided that four vehicles are ultimately delivered with the micro grid when test/demo is completed.
3c	What is meant by "two days of power" to charge the vehicles?	The assumption here is that the micro grid has the capability to charge the vehicles for two days of usage with no local grid or solar power input. In terms of range, it is desired that each vehicle provide one hundred miles of range per day to travel the island. Specific power requirements would depend on the vehicles in use. While back-up power storage is desired, the use of back-up genset(s) and/or hybrid fuel usage for travel or power export are not excluded as options for meeting this requirement.
3d	What specific SAE standards apply to smart charging?	Specific standards are not provided at this time, though contact with the SAE working group on this subject is encouraged.

3e	What level of operational data is required?	At minimum, a basic level of data to ensure meaningful test and demonstration is required, with specific level and capability to be specified per each proposal. Remote data collection is acceptable.
3f	What is the TRL for the system?	Desired TRL is 6 or 7.
3f	What % of operational availability is required?	Desired 24/7 operability, allowing for preventive maintenance. Desired that one major failure should not disable micro grid operation entirely. Require on-call maintenance, expected at least one personnel to be present for duration of test/demo period.
4a	Is the six month build, twelve month test/demo a firm requirement?	This timeframe is provided as a guideline, with a total performance period of eighteen months desired. TARDEC will entertain tradeoffs to time/performance, but eighteen months overall is encouraged.
4b	Are solutions required to utilize all available funding, or less if all requirements are met?	Intent is to maximize results within available budget, so basic solutions for significantly less cost would benefit from enhancement of capability, perhaps offered in modular form as options over/above basic capability.