**Organization of Clean Energy and Climate Computing Heat Recycle Technology Development Center**

The non-profit Organization of Clean Energy and Climate (OCEC) seeks assistance to expand its practical applications of an innovative technology to capture heat from high-end computer servers and to establish an array of solar panels to reduce the carbon footprint of its computer servers. OCEC has already established a project site just south of Marietta OH. This site includes computer servers, a rack unit, a pump station and a 5,000 ft 2 greenhouse. These items are already completed and were shown to the public in an August 9th, 2023, open house. As it first application of this heat-capture technology, this greenhouse will be used to cultivate green vegetables for distribution to food pantries and community-meal sites in Washington County (Ohio) and Wood County (West Virginia). Part of this project will include an educational component whereby high school and college students who are enrolled in agricultural, CTE, and environmental programs in the Mid-Ohio Valley. Endorsements from school districts in both counties have already been obtained as part of applications for small grants from local foundations (the outcomes of the review of these applications are pending). These small grants, if awarded, will be used to acquire garden supplies for the greenhouse and some curricular materials.

OCEC would like to expand its utilization of captured heat to other applications beyond the existing greenhouse. Some ideas for expansion at the current project site are: a fish hatchery, a demonstration of waste water reclamation and an environmentally benign oil water separation process. And ideas for applications at additional sites in the region include providing hot water to hospital buildings.

Please note that both of these counties are included in the federally defined area of Appalachia.

Currently, the computer servers are connected to a sub-station of AEP-Ohio for its electrical service. These systems use approximately 1 MWh. In order to reduce the carbon footprint created by this electrical usage, OCEC would like to establish an array of solar panels. Experts in solar panel systems have estimated that 2000 solar panels would provide 1 MWh electrical supply to the computer servers. The solar system and demonstration units of fish hatchery system, wastewater reclamation, and innovative oil water separation process will be built and tested at Marietta site with an estimated cost of $2 million. (Solar system ~ $1.4 million, computing heat recycle technology demonstration system ~ $0.6 million)

OCEC will work with one of its sponsors, SAI Tech a publicly traded company, to build the systems and test them at the Marietta site.

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