Program Fact Sheet: Hydroelectric Program

Current Status: The hydroelectric program is currently administering 31 Renewable Energy Fund (REF) and legislative grants for hydroelectric projects. Work funded includes reconnaissance and feasibility studies, licensing/permitting, final design and construction. In Round 8 of the REF, AEA received 19 applications to advance hydroelectric project development in Alaska.

Program Background:

As Alaska’s largest source of renewable energy, hydropower supplies 20 percent of the state’s electrical energy in an average water year. There are currently 40 operating hydroelectric projects in the state of Alaska that provide commercial power to utilities. Most are owned by the utilities they serve. Alaska has much untapped hydroelectric potential. Reliable energy generation capacity is necessary to promote the growth of Alaska’s communities. The majority of Alaska’s hydroelectric energy resources are located mainly in southeast and south central, with some resource opportunities in the interior, southwest and the Aleutians.

Hydroelectric plant configurations include conventional dam reservoir projects which regulate flows through the drawing down of reservoir levels and smaller capacity run-of-the-river projects which rely upon the rate and fall of natural streamflow to produce power. Hydropower generation allows the displacement of conventional thermal generation of electricity. Excess hydropower can be dispatched for heating and transportation. Though time consuming to permit and expensive to construct, hydropower is a mature technology with the capability of locking in power rates for 50 – 100 plus years.

For a hydropower resource to be capable of economically-viable power production, a number of attributes must be present: (1) flowing water of sufficient quantity, (2) elevation drop in the river or stream (head), (3) proximity to load (power sales) and (4) minimal environmental risks from project development.

AEA’s hydroelectric program supports projects through grants for hydropower development for electrical power generation; organizes workshops and training sessions; and coordinates state assistance in developing exploration and study of potential new hydropower sites across the state.

Note there are additional AEA program resources committed to hydroelectric development outside of the AEEE program. These include: (1) a dedicated team to manage the development of the 600 MW Susitna-Watana Hydroelectric project and the Battle Creek Diversion for Bradley Lake Hydroelectric Project and (2) direct management of smaller hydroelectric projects by the Rural Energy Group in conjunction with diesel powerhouse and bulk fuel system replacement projects.