

# **Alaska Energy Authority**

## **Renewable Energy Fund Application – Heat Recovery Best Practices Checklist**

The following checklist contains detail items that are critical to the success of a Renewable Energy Fund application. The intent of the checklist is to aid applicants in the submission of a comprehensive project proposal.

### **Economic Analysis**

- Assumptions and their sources are clearly identified:
  - Estimated Recovered Heat Utilization
    - Diesel engine heat rejection rates
    - Electrical generation data (monthly)
    - Total heat demand of target loads (monthly)
    - Heating degree days
    - Passive losses
      - Power plant heat
      - Piping/arctic piping losses
    - Assumed diurnal variations in electrical generation and heat loads
    - Heat loss estimates (plant heating, genset pre-heat, radiator losses, pipe losses)
  - Parasitic electrical loads
  - Cost of diesel
  - Fuel conversion values for diesel
  - Estimated maintenance and operating costs are identified and the rationale of the estimates is discussed

### **Business Plan**

- Preliminary heat sales agreement (must be finalized before construction funds are released)
- O&M
- PCE reporting, IRS, and Bulk Fuel Loans must be current
- The project is consistent with the Regional Energy Plan

### **Design Considerations**

- Age and condition of gensets
- Changes to cooling system needed?
- Priority of loads considered
- The mechanical room has ample room for heat exchanger installation and maintenance
- Design of the existing system is clearly described including the operating temperature range
- Integration of the recovered heat into the existing heating system is discussed
- BTU meters are required for heat sales agreements and for performance reporting of total heat produced by the system

### **Existing Heating System**

- Energy Efficiency improvements have been completed on the proposed buildings.

### **Environmental/Permitting**

- Contaminated sites database checked
- Obstacles in piping route identified

### **Site control**

- Site control must be finalized before construction funds are committed. Site control for pipelines and transmission or distribution power lines may be established using easements or utility right-of-ways so long as the period of the agreement meets or exceeds the intended life of the project
- Proof of valid title to the land and/or written documentation of any private agreements is required.
- The landowner must warrant that there are no liens or encumbrances on the property.
- Final proof of ownership shall be the certificate to plat.
- The grantee shall be responsible for resolving any land ownership disputes between state and/or federal entities, local landowners, native corporations, municipalities, boroughs and community organizations, or other entities.
- If the project site is adjacent to or near an airport or runway, the grantee must research FAA permit requirements, existing or pending leases and easements, and DOT expansion or relocation plans
- Land transfers required for project development shall be recorded with the appropriate District Recording office and a copy of the recordation provided to the AEA grant manager

### **List of reference websites**

#### **Common Pitfalls**

- Planned changes to the electrical generation systems will result in reduction of available heat for recovery
- There is no method to monitor the amount of heat recovered/consumed in the new system