



Technical Application Instructions

Effective 2/25/09

I. PROJECT NAME

Provide the full name of the proposed Alternate Energy Production Facility (AEPF) project.

II. APPLICANT INFORMATION

Within these instructions and corresponding application form, the term "Applicant" refers to the individual or company holding title to the alternate energy production facility.

- A. Provide requested information. The applicant, as defined above, will receive the loan for the proposed AEPF.
- B. If the applicant is unable to provide technical details relating to the AEPF, provide information for a contact (such as a consultant or equipment vendor) having technical knowledge of the AEPF.
- C. Check the box corresponding most closely to the type of organization where the AEPF will be located.
- D. Indicate the landowner of the proposed AEPF site. If the landowner is different from the applicant, attach the terms of the lease and include the annual lease costs in section Project Annual Operation & Maintenance Costs Sect. VII (A.f.) of this application.

III. LENDER INFORMATION

If the applicant has already contacted a lending institution or intends to contact a particular institution, please provide all the information requested in this section.

IV. PROPOSED ALTERNATE ENERGY PRODUCTION FACILITY

Provide sufficient written descriptions and appropriate application attachments to fully describe the type, construction, alternate energy source, generating equipment, supporting systems, and operational strategy of the proposed AEPF. An engineering feasibility study may be included as an attachment to satisfy these requirements. Use the Supplemental Information section if necessary.

- A. Site Layout. Describe the proposed AEPF site and any relevant surrounding landscape topography features. Describe site constraints or obstructions that may affect the performance characteristics of the AEPF (i.e., land utilization, wind turbine interference or solar shading

caused by trees, structures, terrain, etc.). Include distances and directions from the proposed AEPF site for each obstruction.

Equipment Specifications. Provide the manufacturer's equipment specifications or attach the manufacturer's specification sheets for each major system component. The specifications should include, as a minimum, the make, model, size, overall efficiency, operational parameters (i.e., wind speeds, tower height and construction type; hydroelectric turbine type, net head and flow characteristics; solar irradiation intensity effects; boiler/gasifier input and output ratings; etc.), rated power at design conditions, and a performance power curve.

Mode of Operation. Describe the anticipated mode of operation for the proposed AEPF as run-of-source, peaking, off-peak storage or a combination of these.

- Run-of-source operation implies that energy generation and consumption coincide directly with the energy source (wind, solar, stream flow, etc.) availability. Run-of-source operations are generally connected to a continuous energy load and are not switched between the generating and idle modes to suit energy load demands.
- Peaking operation implies that generation is specifically designated to occur during peak demand periods as a means to avoid or offset high power demand costs imposed by the energy supplier.
- Off-peak storage operation implies that at least part of the energy generated during an off-peak period will be stored (i.e., battery bank, ice storage, hot water storage, etc.) for later use during a demand period.

Monitoring. Describe the anticipated monitoring strategy for the proposed AEPF.

- An on-site strategy implies a full- or part-time operator stationed at the proposed AEPF or within a proximity of the facility with responsibilities for daily inspection visits.
- A remote strategy implies that the proposed AEPF is operated and monitored from a site remote to the facility and that an operator may not be available to respond immediately to emergency problems at the facility. Daily inspections may be replaced in remote strategies with a telemetry system of supervisory trouble alarms and generation data-loggers commonly packaged as a SCADA (supervisory control and data acquisition system) or an ADAS (advanced data acquisition system).

B. Indicate the alternate energy technology being proposed in this application.

C. Check the appropriate box that best describes the present status of the proposed AEPF site. If the proposed

AEPF includes the replacement, upgrade, or expansion of existing equipment, attach the existing equipment specifications and copies of the previous 12 months energy generation records.

- D. Identify the county and nearest city/town where the AEPF will be located. Attach a vicinity map identifying the proposed project site location.
- E. Indicate whether the proposed equipment for the AEPF will be new or used and the scheduled start-up date. If the proposed equipment is not new, attach documentation identifying the previous owner, installation location, years of service, remaining life expectancy and its historic performance and maintenance records.

V. ESTIMATED ANNUAL ENERGY GENERATION

- A. Provide the projected average annual energy (include the appropriate energy units) generated by the AEPF and the AEPF on-site annual energy load requirements. Calculate the net energy available for sale by subtracting the on-site annual energy load requirements from the projected average annual energy generated.
- B. Check the type of energy that will be produced by the proposed AEPF.
- C. Provide the source(s) of data used to calculate the average annual energy potential for the proposed AEPF. Attach copies of duration curves (energy source vs. time exceeded) or data used to calculate the AEPF energy potential.

VI. PROJECT CAPITAL COSTS

Provide the capital costs associated with the construction of the proposed AEPF. Construction cost estimates may be provided as either an itemized conventional or turnkey contract. Costs not accounted for in the provided construction cost estimates should be itemized as a contingency. Applications utilizing turnkey contracts should list the total turnkey contract cost and attach documentation indicating the name and address of the turnkey contractor offering the bid. A proposed AEPF designated to replace existing equipment may qualify for an associated salvage value credit (attach sales contract documentation to support salvage value credit).

VII. PROJECT ANNUAL OPERATION & MAINTENANCE COSTS

- A. Provide the anticipated annual operating and maintenance costs associated with the proposed AEPF.
- B. Provide the annualized periodic major maintenance costs expected over the life of the AEPF.

VIII. PROJECT ANNUAL BENEFITS

- A. Provide the applicable unit values for the energy and power produced by the AEPF. The unit values shall be representative of a negotiated energy sales agreement or avoided purchased energy and power costs of the proposed AEPF customer(s).
- B. Indicate the customer for the energy generated by the proposed AEPF. The energy may be consumed by the applicant, other third party dedicated customer(s), grid bound customer(s), or a combination of dedicated and grid bound customers. Definitions for the different customer type and required application attachments for each are provided below.

Dedicated Customer: A party or client to whom the energy generated by the proposed AEPF will be directly sold or consumed. The applicant may be a dedicated customer provided the energy is both generated and consumed by the applicant. Dedicated customers will generally be consumers of the energy, but may sell excess energy generation to third party energy suppliers. **Attach** the documentation indicated below for applications having dedicated customer(s):

- **Utility Agreements.** Attach copies of the (1) Power Sales Agreement and (2) Grid Interconnect Agreement including energy unit values and term of contract for proposed AEPF facilities.
- **Customer Business Hours and Energy Consumption History.** **Attach** documentation demonstrating that the customer(s) time-of-day energy requirement(s) coincide with the time-of-day generation. Energy generated outside of the customer(s) usage time period can not be considered a benefit under line D of this section unless the energy can be stored for future usage or sold to another third party.
- **Displaced Energy Purchases Incremental Value.** **Attach** a copy of the dedicated customer's energy supplier energy tariff(s) in effect at the time of this application. For the purposes of this application, annual energy revenue calculated in line D for dedicated customers shall be based on an energy value equal to the energy tariff rate of the last unit of energy being displaced by the AEPF. This provision is enforced in cases where the customer is projected to receive less than 100% of its energy requirements from the proposed AEPF and is currently purchasing energy from an energy supplier having a graduated rate schedule (i.e., generally increased energy consumption lowers unit energy costs).
- **Customer Load versus Energy Production.** **Attach** documentation (copies of the dedicated customer's most recent 12 months of energy bills) demonstrat-

ing that the customer(s) energy requirement(s) coincide with the projected net energy generated by the proposed AEPF. Energy generated in excess of the customer(s) energy demand can not be considered a benefit under line Line D unless the energy can be stored for future usage or sold to another third party.

Grid Bound Customer: Defined as an energy utility or energy utility broker responsible for the transmission and sale or resale of energy within an energy distribution grid and to whom the energy generated by the proposed AEPF will be delivered.

- *Utility Agreements:* Attach copies of the (1) Power Sales Agreement and (2) Grid Interconnect Agreement including energy unit values and term of contract for proposed AEPF facilities.

- C. Calculate the projected annual power demand revenue as the product of the AEPF dependable power capacity and the power demand unit value. Dependable power is based on the capability of the proposed AEPF to reliably offset peak demand loads and will only be considered applicable if accounted for in a negotiated power sales agreement or otherwise demonstrated appropriate for the proposed AEPF. Note that the incremental power demand revenue for upgraded and/or replacement facilities shall be calculated based on the difference between the proposed dependable power and the historic dependable power of the existing facility.
- D. Calculate the projected annual energy revenue as the product of the projected net energy (calculated in Sect. V. Estimated Annual Energy Generation part A) and the unit value of energy. Note that the incremental annual energy revenue for upgraded and/or replacement facilities shall be calculated based on the difference between the proposed annual net energy generation and the historic annual energy generation of the existing facility.
- E. List benefits offered by the proposed AEPF, not otherwise accounted for in this application, and provide their associated annual revenue. Attach suitable documentation, as applicable, to substantiate the additional benefit claim.
- F. Provide the expected annual AEPF availability as a percentage. AEPF availability is defined as the time within the year that the AEPF is either generating energy or in a standby mode divided by the total time within the year. AEPF availability is reduced from 100 percent when the facility is unable to produce energy due to equipment failures, intentional or unscheduled, such as routine equipment maintenance and unpredictable emergency outages.

Calculate the **total annual benefits** by adding the an-

nual revenues from power demand and other benefits to the product of the annual incremental energy revenues by the AEPF availability.

IX. SIMPLE PAYBACK

- A. Calculate the simple payback of the proposed AEPF by dividing the total project capital cost by the difference between the total project benefits and the total operation and maintenance costs.
- B. Indicate the amount of Energy Center funds being requested.
- C. Indicate the loan term being requested. The loan term requested may be less than the calculated simple payback at the choice of the applicant, however, an explanation shall be provided when the requested loan term exceeds the calculated simple payback rounded up to the next year.

X. SUPPLEMENTAL INFORMATION

Reference responses requiring additional space to the corresponding section item.

XI. CERTIFICATION

Applications must be signed by the applicant as defined in Sect. II Applicant Information. Applications prepared by a party other than the applicant require the signatures of both the applicant and preparer. Unsigned applications will not be considered.

Mail application to:



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