Feasibility Study

- Determines if a CCHP project is practical and financially viable

Introduction

A Feasibility Analysis helps you determine if CCHP is a viable option not only technically (i.e. will it work?) but also financially (i.e. is it worth the investment?). It uses a detailed engineering and financial model that preferably employs hourly load profiles (or at a minimum monthly load profiles and load duration curves) to determine electrical, cooling and heating loads. The first step in a Feasibility Analysis is collecting data on your facility and its energy use.

Service description

New construction:
A plan check will assist here. For plan check you should have available for us: your site plan, floor plans, equipment lists and layouts, all professionally calculated electrical loads including lighting, mechanical equipment loads, manufacturing/processing equipment loads, all other misc. loads including pumps, compressors, refrigeration, heating, etc., as well as office, ancillary areas and outdoor area loads. Thermal load calcs done by a reliable mechanical engineering firm should include all heat (hot water, steam, space heating and other heating/drying) requirements and cooling loads including refrigerated rooms. Dehumidification requirements should be included here as well. It is crucial to include operating profiles for each segment/area of your operations. Ie. hours lights on/off with corresponding cooling/heating/humid set temps. Should you need help with this, we certainly are available to assist with this process.

Existing Operations:
A site walkthrough check list and access to your utilities 15 minuite interval use data is most benificial. If all of the data requested in the walkthrough checklist is not readily available, a minimum of 12 months of electric and fuel bills as well as 12 months of steam use (where applicable) should be collected. (Note that bills for both delivery service for gas and electric and the commodity should be obtained). We will analyze and incorporate the results of your data collection into the study.

A Feasibility Analysis typically involves:

- Electrical load profiling
- Thermal load profiling
- New utility rate structure analysis
- Equipment sizing
- Avoided equipment costs
- Thermal use determination (what to do with the waste heat)
- Installation cost estimations
- Permitting requirements

- Utility interconnection requirements
- Financial and economic calculations (investment, simple payback, ROI, operating costs, etc.)
- Financing option availability
- Analysis of different ownership structures with recommendations as to your specific project structure
- Discussion of design/construction models

All of these facets can be combined to create an hour-by-hour model of the output of a potential CCHP system. The hourly fuel consumption, maintenance, electrical output, useful thermal output, and the value of that output is then calculated into kWh savings. This resulting cost/savings information can then be compared to what your facility would pay if the CCHP system were not installed.

This analysis can be used to determine if investing in CCHP will meet your facility's long-term goals. Various financing options can be explored at this point to tailor the project to meet your goals.

The output of the Feasibility Analysis normally includes a detailed report on savings, equipment and installation budgetary costs, simple paybacks, cash flow, rates of return, and a conceptual one-line design including equipment sizing. Accuracy should generally be within 15-25%.

The Feasibility Analysis normally takes two to three weeks.

If the results of the Feasibility Analysis look promising, you would next continue to Project definition and set up..

Our fees for this service start at $5,000 depending on the size and complexity of the project. Should you move forward with the project this fee will be credited towards your final contract price.

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