

Siting Criteria for Wind, Solar, Geothermal, Biomass and Clean Fuel Projects



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Project Context

Land available to support Energy projects

- Does the use of the candidate site mitigate project risk; if so how ?
- What role does land play in the development of the project ??

Project Context

Conventional Energy Systems

- Consistent within the context of the host utility
- Complements distribution systems
- Contributes to a reduction in operating costs

Non-conventional Energy Systems

- | | |
|---|---|
| Electricity | Wind, Geothermal, Solar thermal/PV, Tidal |
| Beneficial Use | Medium Btu Gas Landfill, biomass, Oil/gas exploration |
| Harvesting, Collection, Conditioning, Delivery, Use | |

If a recognized Renewable Source, benefits may exceed energy content due to environmental attributes associated with the energy source

Regardless of the energy system; the financial community will assess risk based on

The source of the energy, the delivery of the energy to the point of use, and its efficient end use.

Project Risk Assessment

The source of the energy, the delivery of the energy to the point of use, and its efficient end use.

Source

Environmental residual liability / Impacts both positive & negative

Depletion Curve

Fuel rights / Right of Way

Energy Format gas, liquid, electrical

Delivery

Quality; energy product must be directly comparable to conventional sources delivered to the point of use

Metering

Fully subscribed, or if a single end-use Take or Pay

Efficiency

Process modifications

Measure and Verify

To be financially feasible, a project must be sustainable under multiple scenarios, relative to conventional energy options.

Project Feasibility

To be financially feasible, a project must be sustainable under multiple scenarios, relative to conventional energy options.

Financially feasible

Regardless of debt / equity;

is the hurdle rate satisfied during the term of the project

Is there any upside beyond the base case

Sustainable

Basis of the Base Case; what are the assumptions

Threats to the Base Case; price of competing sources of energy

Early Dec 08 benchmarks

\$43.67/ bbl WTI, \$0.957/ Gal Unleaded NY Harbor, \$6.55/ MMBtu Henry Hub

Conventional Energy Options

Conserve

CHP

Demand Response (EnerNOC, Comverge)

Peak shaving, load shifting