

# 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