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 access 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