

Lessons Learned from the California Biomass Power Experience

Alternate Titles:

“Surviving the Bankruptcy of Your Host Utility”

“How About a 12 year old Biomass Tax Credit
You Can’t Use”

“Surviving the Clinton Timber Years with a
Mill Waste Based Plant”

1987

Wheelabrator Shasta Energy Company Inc. – During Construction



In 1987

- **Stand alone power plant purchasing excess mill waste**
- **Tool to close last of teepee burners**

2004



Wheelabrator Shasta Energy Company Inc. -Today

In 2004

- **Integral to achievement of forest management goals**
- **Integral to phase-out of agricultural burning**
- **Additional tool besides prescribed fire**
- **Integral to achievement of recycling goals**
- **Resource for community to dispose of wood materials**
- **Resource for attracting new industry (steam, electric, waste disposal)**

In 2004

- **Source of paper chips from cull logs**
- **Source of low grade fertilizer for farmers**
- **Resource for junior college power plant training program**
- **Second largest taxpayer in county**
- **Largest source of air pollution reduction in region**
- **Disposal option for old railroad ties**

Lesson No. 1

- Permit the plant for a wide variety of biomass fuels
 - Originally 80+% sawmill residues
 - Now 31%

 - Originally no agricultural wastes
 - Now pits, shells, rice hulls, orchard removals, railroad ties, wax coated paper, urban wood

Lesson No. 2

- Design the boiler system for the worst fuel you can imagine
 - Avoid high velocities caused by low BTU, high moisture fuels
 - Avoid ash erosion from fuels that carry several times the theoretical amount of ash

Lesson No. 3

- At design phase, attempt to minimize later use of chemicals for environmental, operational needs
 - Design for low Nox and CO
 - Use RO system to minimize chemicals
 - Obtain wastewater discharge permit
 - Certify ash for use on farm fields
- You will have a hard enough time making money,
don't compound it with high operating costs

Lesson No. 4

- Never claim you are an economical producer of renewable electricity
 - Your capital cost is too high
 - Your labor cost is too high
 - You are too small
- You are instead a solver of various biomass disposal problems who produces electricity as a byproduct
 - Improved forest health
 - Lowered fire potential
 - Improved air quality
 - Increased landfill life

Lesson No. 5

- Do not allow your revenue to be indexed to another form of generation
 - Your costs typically will vary with some general economic index (PPI, CPI)
 - Too much risk to tie to gas

Lesson No. 6

- Do not expect elected officials to understand your non-electric benefits and reward you for them
 - Support often tied to crisis of moment, annual budget cycle or party in power at time
 - 5 year effort to make simple definition change to Federal Biomass Tax Credit

Lesson No. 7

- If economic conditions are right for a biomass project, do not expect to have the playing field to yourself
 - Early California plants overwhelmed available fuel supply and drove up prices

Lesson No. 8

- There is indeed strength in numbers
 - Form coalitions with other biomass producers in state and nation
 - Form coalitions with other renewables
 - Form coalitions with forest products, ag industries and moderate environmental groups

Conclusion:

- We may be on the verge of creating an economic environment where existing plants are stabilized and opportunities are available for new plants
 - High and rising natural gas costs
 - Spread of renewable portfolio standards, green credits
 - Disruption, cost of foreign oil supplies
 - Recognition of role of biomass in forest health, agriculture
 - Pending changes to Federal Biomass Tax Credit