Truckee Bioenergy Project Scoping Study
Update and Recommendations

Prepared by:
Wildephor Consulting Services, LLC

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Topics

- Green Waste Disposal
- Candidate Solutions
- Study Refinement Effort
- Potentially Viable Options
- Recommendations

Green Waste Disposal

- Initial evaluation of biomass utilization options as an alternative to landfill disposal
  - Town disposing of 25k cubic yards annually; 5,000 green tons / 4,000 bone dry tons (BDT)
  - TTSD tipping fee more than doubled since 2018
- Green waste projected to increase by 3x due to Measure T programs: >$1MM/year disposal

Candidate Solutions

- Evaluated community-scale solutions based on technology agnostic end products
- Three major solution types considered
  A. Disposal
  B. Biomass Power
  C. Biomass Heat
- Total of seven candidate solutions evaluated as alternatives to baseline disposal

Study Refinement Effort

1. Assess long-term disposal costs at ERL
   - TTSD believes tipping fee now stable ($15/CY)
   - Have enhanced green waste handling processes
   - Cogen plants not viewed as long-term buyers
2. Confirm quality/quantity of TFPD biomass
   - Defensible space programs = 1,600 BDT/year
   - Treatment of 500 acres/year = 6,400 BDT/year
   - Roughly 50% projected to be high quality chips

Study Refinement Effort

3. Investigate air curtain burner permitting
   - Requires air, water, and chip storage permits
   - Permitting not feasible for 2022 operations
   - TTSD came to same conclusion for unit at ERL
4. Evaluate PPA/NEM options with TDPUD
   - 1 MWe biomass power plant would require PPA
   - 150 kWe generator could use net metering
   - TDPUD to hire consultant for detailed analysis

Study Refinement Effort

5. Inquire into biochar for SB 1383 targets
   - Corresponded with program staff at CalRecycle
   - Use of biochar does not count toward targets
   - Recycled organics must come from permitted MRF
6. Consider hydronic snow melt for TTAD
   - Substantial excess process heat may be available
   - Could provide snow melt for main airport apron
   - TTAD management is interested in exploring idea

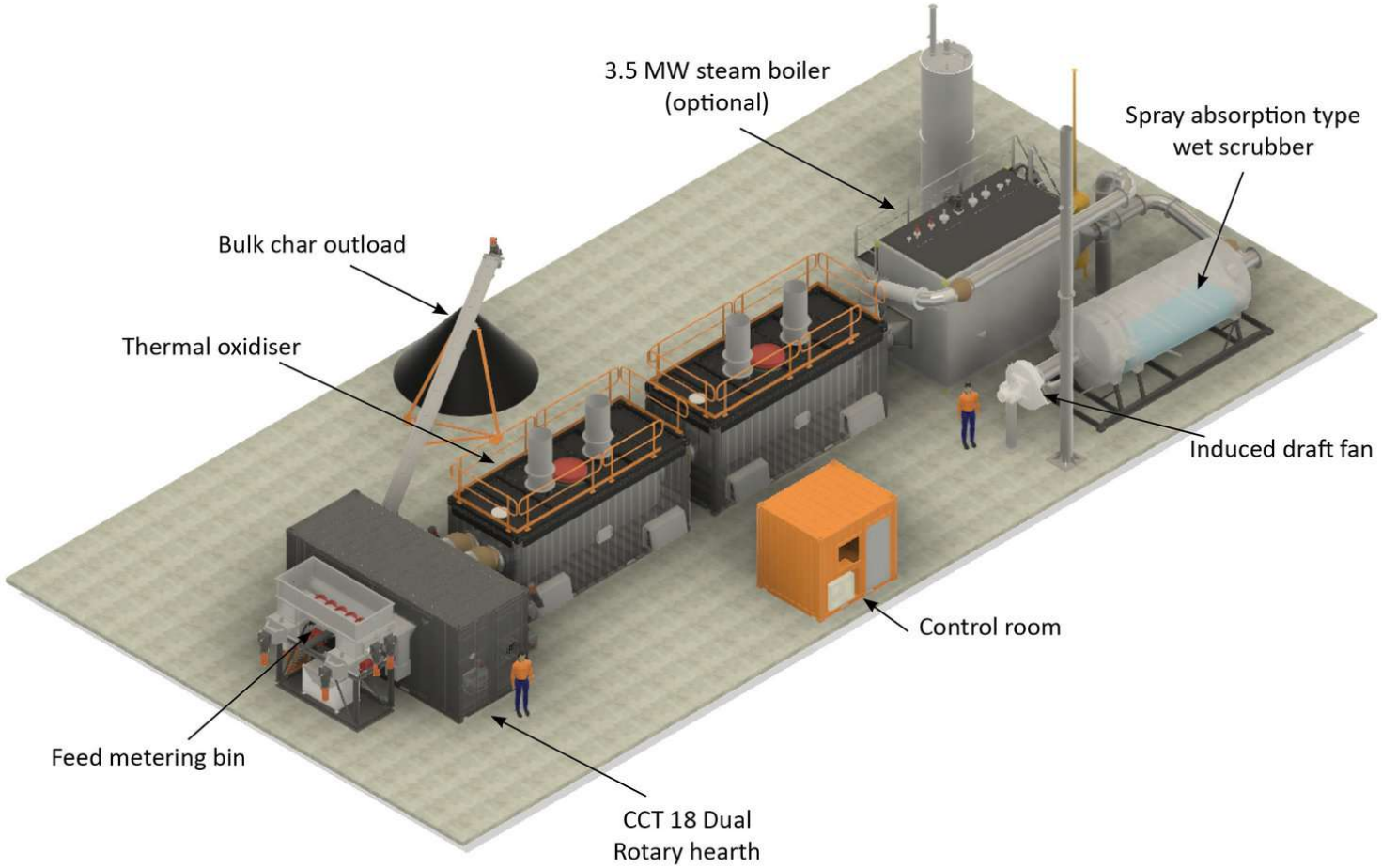
Potentially Viable Options

- **Option A: Biomass Power**
  - 1.0 MWe gasifier w/engine or turbine generator
  - Would consume ~6,000 BDT/year of feedstock
  - Could supply microgrid during main grid outages
- **Option B: Combined Heat and Biochar**
  - 3.5 MWth pyrolysis plant w/electric generator
  - Would consume ~9,000 BDT/year of feedstock
  - Modular system could be expanded over time

Potentially Viable Options

Biomass Power: SynCraft Gasification System

Potentially Viable Options



Combined Heat and Biochar: Pyrocal CCT System

Recommendations

- Detailed feasibility assessment of both options needed to support capital project decision
- Biochar market study needed to provide basis for estimating financial contribution
- Nine-month duration; timeline for facility design and construction additional 18-24 months

WILDEPHOR

W. David Featherman, Principal

+1 510 845 0016 | david.featherman@wildephor.com

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