Small Scale Biomass to Energy Projects in California

Stepping Stones to building a small scale biomass facility under the CPUC BioMAT program

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Choosing a Physical Location for a Facility

- *What Economic Opportunities and Capacity for Business Success are Present at this Location? Investigate Local business patterns*
- *How well is this project location suited for retail sale of electricity to the grid? Research the grid infrastructure and applicable interconnection processes*
- *What is the physical condition of your site location? Project geography, previous uses and resource constraints can significantly impact the success of a project.*
- *What is the legal condition of the property? Ownership , lease or license*
- *Restrictions on property use: zoning and permitting? Understand permitted uses onsite.*

Contracting for Project Success

- Rules of the Road when Contracting: General Risk Management Strategies Within Contracts
  - Proper Parties, authority to bind, jurisdiction
  - Scope of Work detail; know your business points
  - Insurance requirements
  - Dispute Resolution and Indemnification
  - Term and Cancellation provisions
- Service vs. Goods vs. Construction Contracts
- Contracting with Public Entities
- Lynchpin of success: Feedstock contracting

Obtaining a Buyer for your Power: the State BioMAT Program

- The Bioenergy Feed-in Tariff Program [or the Bioenergy Market Adjusting Tariff (BioMAT)] is a feed-in tariff program for small bioenergy renewable generators less than 5 MW in size.
- To qualify for a Power Purchase Agreement you must obtain an interconnection agreement, include an experienced project developer on your team, and have site control over your project location
- The allocation for forest biomass projects are within PG&E territory, except 3 MW available in SCE territory
- The program is about to go through scrutiny by the California Public Utility Commission, and may change somewhat. It is expected the program end date will be extended past its current date of January 31, 2021.

The Interconnection Study Process

- Obtaining a pre-application report
- Filing an EGI: *Electrical Generator Interconnection Request*
- *Fast Track and supplemental fast track options*
- *If no fast track, then Independent or group study required*
- *A Pause button in the interconnection process after draft is made final*
- *Facilities studies*

Financial Security Deposits and payment for construction of Interconnection System

- The next step after the completion of a FAC, or if that study was waived, the SIS, is to make a series of payments towards the project's interconnection costs. As mentioned earlier, the first financial security obligation is due within 60 calendar days from the Applicant's receipt of the SIS report. Two separate Financial Security instruments are required. First, a Financial Security instrument in an amount equal to the lesser of (i) fifteen percent (15%) of the total cost for Network Upgrades, or (ii) $20,000 per MW of electrical output, is due. Second, a Financial Security instrument in the amount of twenty percent (20%) of the total estimated cost for Distribution Provider's Interconnection Facilities and Distribution Upgrades is due.
- The second financial security obligation is due within 120 calendar days of the final FAC report (or SIS if FAC is waived). First, an Interconnection Financial Security Instrument is due for Network Upgrades, which equals the lesser of (i) $1,000,000 or (ii) thirty percent (30%) of the total cost responsibility assigned to Applicant for Network Upgrades. Second, Interconnection Financial Security Instrument for Distribution Provider's Interconnection Facilities and Distribution Upgrades equals thirty percent (30%) of the total cost responsibility assigned to Applicant for Distribution Provider's Interconnection Facilities and Distribution Upgrades.
- The third and final Financial Security obligation is due on or before the Start of Construction for all upgrades. The two separate Interconnection Financial Security instruments must be modified so that they equal 100% of the total cost responsibility, or the total payments in cash must be made.
- There are a series of consequences and outcomes if during this time the Applicant withdraws their application. To understand what happens to the deposits in that circumstance, see Rule F4e and more generally, F6.
- A General Interconnection Agreement must be entered into at this stage of the process

Reimbursement for Costs: Strategic Location

According to Table E2 on Sheet 61 of the Rule, the costs associated with Interconnection Facilities and Distribution upgrades are covered by the Applicant. Costs of upgrades required for the transmission system are partially reimbursed pursuant to the "applicable CAISO Tariff", as described in Table E2 of the Rule. Currently PG&E takes the position that reimbursement is covered under Appendix DD, also known as GIDAP. Currently the maximum amount of reimbursement is $60,000 per MW. This is contrary to the current BioMAT rules that would allow for up to $300,000 total reimbursement no matter the size (up to 5 MW) of the facility. As of the date of the drafting of this paper, there is still considerable confusion about this issue. Note that this reimbursement issue is referred to as **"strategic location"** requirements.

Interconnection Cost Issues

- Aging infrastructure vs Gold Plating upgrades
- Capacity at substations: solar and other renewable energy proejcts
- Cost Envelope Option
- *The Very Real Cost of Ownership (COO) burdens that are not discussed within System Impact Studies.*
- Electricity Rule 2. While most of this Rule discusses voltages, load limitations, protective devices, and prevention of interference of system, Section I of the Rule describes how "special facilities" must pay a percentage of the cost that PG&E will incur for maintaining such a facility over time. Projects under 60 kV (BioMAT forest biomass projects fall below this cap) are required to pay a percentage of their distribution and facilities upgrade costs (not transmission upgrade costs). This payment can be made over a period of time, or may be required to be paid in one lump sum, as stated in the Rule. Note that the SIS reports do not calculate this amount, and it is not listed in the final cost charts with any specific value.

Step Two: Prove Site Control

- Once the draft SIS has been received, further documentation proving a long term lease or fee title ownership by the business entity developing the project may be required beyond what was submitted during the Independent Study process. The Utility will ask for a copy of a deed or lease to meet BioMAT program requirements. If a lease is the option of the Project, there are many important aspects of that agreement that must be included in order to meet the requirements of the Subdivision Map Act, Zoning laws, and the terms of the PPA. Be sure to have a lease carefully reviewed by a professional.

Partner with Experienced Project Developer

- Another item that must be demonstrated for BioMAT program inclusion is participation of an experienced developer on the team. By experienced developer, this means at least one person who has experience building a similar facility, either domestically or internationally. The developer must at least be a consultant on the project, and ideally would have direct experience with whatever technology you has been chosen. Note that this requirement is fairly broad. At this time, Projects have not been asked to submit developer agreements or other contracts to prove this involvement, but that may change.

Placing a Project within the BioMAT Queue

- Program Participation Request (PPR) will need to be filed. This form will ask for information pertaining to the three previous steps, and other items pertaining to project technology and other project details.
- $2,000.00 per MW application fee.
- if the SIS has expired, a $30,000.00 security deposit is required, of which all but $1,000 will be refunded when the project takes a PPA or drops out of the queue.
- An electrical engineer or EPC will be needed to fill out technical sections
- Fuel Resource Attestation form
- File within first 10 days of month to be considered within that month's Program Period
- PPA available price for forest biomass projects is generally stable at $199.72/MWh

A General Review of the Power Purchase Agreements (PPA) version approved December 2018

- The Cover sheet: where you fill in information
  - Fuel source
  - Term of PPA 10/15/20 years
  - Full buy sell vs excess sales
  - Repeat Facility and Site Description information as in previous documents
  - Curtailment orders
  - Milestones calendar
- Guaranteed Energy Production
- Collateral Requirement Payment or Letter of Credit in the amount of $20,000 per MW required to enter into the PPA.
- Which party should and can enter into the PPA
- Impacts of PG&E Bankruptcy

Final Words

- Woodageddon: wood waste crisis in all sectors
- Critical Feedstock Contract Security issues
- Demanding science based on method, not opinion (Political barriers)
- Lack of methane research related to alternative fate of waste
- Emerging, and slow to emerge, technology
  - Costs
  - Air quality concerns
  - Gasification and tar clean up issues
- The biochar market, heat markets and other co-located businesses
- Accounting for multiple benefits of forest health

Thank you! *From CLERE Inc…*

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