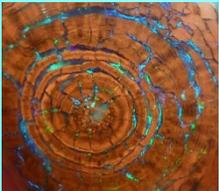


BioMAT (SB 1122) Facility Size Limitations and Excess Sales Agreements

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Land Use
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Introduction

There has been significant confusion about the three megawatt (MW) project size limit in place within the SB 1122 program (BioMAT). The term “effective capacity” is used within the enabling legislation, while the program documents refer to several other types of capacity, but nowhere is the term “effective capacity” defined within the program statute, other statutes, California Public Utilities Commission (CPUC) decisions or the program documents. Also, adding to the complexity is the term “site host load” that is used within the PPA template, which refers to California Public Utilities Code 218(b). This law allows for some offsite energy sales in some circumstances. How to size a facility, and how generated energy can be sold in compliance with the enabling statute and program documents, is an important early step in project development within the BioMAT program.

Definitions within the Statute and the Power Purchase Agreement template

Section 399.20 of the California Public Utilities Code is where the BioMAT program is codified. Within that statute a key term is used that is not common in the energy production vernacular: it states that that an electric generation facility must have an “effective capacity” of no more than 3 MW. Without a definition determined by industry practice, the term ‘effective capacity’ must be considered in context of other related terms found within CPUC programs, templates and other sources. The following terms from the Power Purchase Agreement (PPA) template to be used for the BioMAT program are useful:

“Available Capacity” means the power output from the Facility, expressed in whole megawatts, that is available to generate Product.

“Contract Capacity” means the lesser of: (a) the amount of nameplate generator capacity, set forth in the Cover Sheet, that Seller commits to install at the Site; and (b) the Demonstrated Contract Capacity.

“Delivered Energy” means all Energy produced from the Project, expressed in MWh, as recorded by the meter specified in Section 6.2.15.2.1 or the Check Meter, as applicable.

“Demonstrated Contract Capacity” means the Facility’s total rated electric alternating current energy generating capacity which will equal the metered amounts for the Demonstration Hour, as determined in accordance with Appendix J.

“Energy” means three-phase, 60-cycle alternating current electric energy measured in MWh, net of Station Use and, in the case of Excess Sales arrangements, any Site Host Load.

“Product” means all electric energy produced by the Facility throughout the Delivery Term, net of Station Use, electrical losses from the Facility to the Delivery Point, and, in the case of Excess Sale arrangements, any Site Host Load; all Green Attributes; all Capacity Attributes, if any; and all Resource Adequacy Benefits, if any; generated by, associated with or attributable to the Facility throughout the Delivery Term.

“Site Host Load” means the electric energy produced by or associated with the Facility that serves electrical loads (that are not Station Use) of Seller or one or more third parties conducted pursuant to California Public Utilities Code Section 218(b).

“Station Use” means energy consumed within the Facility's electric energy distribution system as losses, as well as energy used to operate the Facility's auxiliary equipment. The auxiliary equipment may include, but is not limited to, forced and induced draft fans, cooling towers, boiler feeds pumps, lubricating oil systems, plant lighting, fuel handling systems, control systems, and sump pumps.

Other useful concepts from other sources include:

- Electric power is a measure of the rate at which electric energy is generated. The standard unit is a watt (W) which represents one joule (J) per second.
- Electric energy is a measure of electric power over time. The standard unit is a watt-hour (Wh) which can be simplified to a joule (J).
- Kilowatt (kW) represents 1,000 W.
- Megawatt (MW) represents 1,000 kW or 1,000,000 W.
- Capacity Factor is a measure of the utilization of a unit relative to the maximum time in a year (~8,760 hours). Capacity factor is calculated as the quotient of total electrical energy produced over a year and the product of nameplate capacity and 8,760 hours per year.
- Nameplate capacity refers to the power production capability of generating equipment as listed by the manufacturer under standard operating conditions, usually with a specified fuel. The nameplate capacity is typically written on a physical location attached to the generating equipment's housing. Nameplate capacity is also commonly referred to as the rated capacity, nominal capacity, installed capacity, or maximum effect, is the intended full-load sustained output of the electrical generating equipment.
- Syngas and producer gas are commonly interchanged terms for the gas product that is generated from gasification technology that can be used for heat or hydrogen production, and for generation of mechanical and electrical power. Like other gaseous fuels, syngas/producer gas gives greater control over power levels when compared to solid fuels, leading to potentially more efficient and cleaner operation.
 - Producer gas is technically the mix of all gases derived from a gasification vessel.
 - Syngas is technically conditioned producer gas comprised of only hydrogen and carbon monoxide.
 - Common use of the terms producer gas and syngas does not follow these distinctions.
- The PPA states: “13.2.2.8. Automatic basis for breach of contract exists if Seller installs generating equipment at the Facility that exceeds the Contract Capacity and such excess generating capacity is not removed within five (5) Business Days after Notice from Buyer.”
- Parasitic load is used interchangeably with Station Use as defined above.

What amount of energy output can be produced under the program?

As mentioned above, the enabling statute refers to an “effective capacity limit of 3 MW.” The term “Effective Capacity” is not specifically defined in the program or associated CPUC documents, and it is not generally used within the energy production industry. Any question of statutory interpretation begins with looking at the plain language of the statute to discover its original intent. To discover a statute's original intent, courts first look to the words of the statute and apply their usual and ordinary meanings.¹

According to the Webster's Dictionary “effective” means “producing a decided, decisive, or desired effect”, and “capacity” means “the largest amount or number that can be held or contained.” In general parlance, one would expect that this term could mean ‘available capacity’ as defined in the PPA, or ‘nameplate capacity’ as it is generally defined and described in the PPA, or it could be referring to the maximum power output of the facility.

Finding that the maximum power output of a facility equates to “effective capacity” would cut very broadly and would include non-electrical resources produced on-site such as heat, syngas and hydrogen. As statute Section 399.20 pertains to electrical energy production, there is no basis to assume the legislature intended to go beyond electricity when it set its maximum output threshold.

Another option, interpreting the term ‘effective capacity’ as ‘nameplate capacity’ also fails to make sense. The first reason is that nameplate capacity is a manufacturer's specification and would be technologically limiting to electrical generating equipment built for specific biogas, producer gas, or syngas characteristics. The second and most persuasive reason is that the term ‘nameplate capacity’ is a well-known term of art that could have been used in the Act, but the legislature chose not to use it.

Available Capacity, as used in the context of the PPA, also fails to make sense because that definition excludes station load and excess sales of electricity. If accepted as ‘effective capacity’, a large facility could simply peel off 3 MW from its larger production schedule, failing to instigate new distributed generation power generation as the legislature intended.

After considering the different related concepts, the fair interpretation of the term ‘effective capacity’ is that it is most similar to “nameplate capacity”, in that it includes all demonstrated electrical power production at standard operating conditions with specified fuel types. “Effective capacity” is different from “nameplate capacity” in that the program cannot require eligibility determined by strict adherence to manufacturer's specifications, because most engines are not currently manufactured specifically for syngas (or biogas). The use of different organic waste feedstock and the production of non-traditional fuels causes deviations from the manufacturer's output parameters. The legislature was wise to provide a definition that meets

¹ Black's Law Dictionary, 2nd Ed.

the intent to limit projects to distributed generation, but also provide for some flexibility for project developers.

Developers should describe the “nameplate capacity” of their equipment and explain how they will meet the program size cap within their program documents and PPA. There may be some circumstances where an engine has a “nameplate Capacity” over 3 MW, but they can explain how they intend that output will remain under the cap, satisfying “effective capacity” limits.

Are there any rules or limitation to the production of heat, syngas, hydrogen or biochar under SB 1122?

The simple answer to this question is “no”. These products are not ‘electricity’ and are separate and apart from the program. Any use, sale or trade of these products is not a part of the PPA or associated with the program.

What about station use, excess sales and site host load? What are the rules?

As mentioned above, all electrical energy production is capped by the “effective capacity” definition at 3 MW, give or take minor fluctuations related to engine functions. A project can, however, structure itself to produce power and take advantage of state law that allows for use on site and sale off site in limited circumstances. California Public Utilities Code Section 218(B) allows sale of electricity to one or two on-site tenants, or neighbors, as long as there is not a public road between the properties, and the tenant/neighbor cannot be in the business of petroleum products or is a subsidiary of the project. Energy used or sold under this section is not described or accounted for within PPA.²

An important detail of the program is Section 13.2.2.8 of the PPA. This section restricts projects from expanding *after* they have entered into a PPA. Projects cannot increase contract capacity after PPA execution. Note, however, if the PPA is in place for 2 MW, a project could, later during the PPA term, add up to 1 MW of capacity as long as that electricity would qualify as site host load under California Public Utilities Code Section 218(b). The total project size, however, including site host load, must remain below 3 MW effective capacity.

What about multiple projects on one piece of property or contiguous properties? What is daisy chaining?

The CPUC takes the application of the project size limitation seriously. When the CPUC established the ReMAT program (which was the predecessor feed-in tariff program that was made available to traditional renewables in 2013) the CPUC restricted “Daisy Chaining.”³

² [See Tariff Section I(6)]

³ CPUC D. 12-05-035, Section 8, Page 68.

Generally Daisy Chaining means a series of interconnected or related things,⁴ and then in the case of the CPUC programs, interconnected projects that are brought together to avoid the 3 MW capacity limit. The CPUC gave discretion to the IOU to develop attestation language to define this concept and prevent manipulation. The IOU simply quoted the CPUC Decision. The language can be found in both the ReMAT and BioMAT tariff, and states that the Program Participation Request (application to get into the queue to participate in the program) will be denied if “the project appears to be part of a larger overall installation by the same company or consortium in the same general location.”⁵ This language is broad. The recommendation is that if you choose to consider developing a project in close geographic vicinity of another project, ensure clear and transparent independence between the projects.

Conclusion

The BioMAT program has an important size limitation dictated by its enabling legislation. Basically a project can only generate 3 MW of electricity at the facility, with exception to nominal fluctuations typical to electrical generating equipment and parasitic load. You can, however, use excess syngas for heat, hydrogen for on-site use or sale in most circumstances. Projects with single or multiple engines can only combine to produce a combined 3 MW effective capacity prior regardless of if the electricity is sold under a BioMAT PPA or to meet site host load. Daisy chaining must be avoided, and products other than electricity, such as heat, hydrogen, syngas and biochar are not included in this program. If further questions arise relating to the topics in this memo, please seek assistance before making critical projects decisions.

⁴ axim-ic.com - Electrical Engineering Glossary Definition for Daisy Chain

⁵ Tariff Section M (5).